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BOSTON
1885

ENTIRE WHEAT FLOUR.

(CHAPMAN'S Patent Prepared.)

FOR INFANTS.

By far the most satisfactory Infant's food yet introduced, It is absolutely free from chemical admixture, being made from the finest wheat, and containing not only the starch but also the gluten or flesh-forming, and *earthy phosphates* or teeth and bone-forming portions of the grain: Its richness in the latter distinguishes it from all other farinaceous foods, and renders it of great service, especially during the period of teething. Its superiority as an Infant's food to arrowroot, corn-flour, &c. (which, being mere starches, are unfit to serve as a substantive diet), is obvious.

"I am satisfied that it has nutritive qualities far surpassing the ordinary farinaceous food."—WEDDON COOKE, Esq, *Surgeon to Cancer Hospital.*

"It is incomparably superior to arrowroot, corn-flour, and other forms of starch, which contribute but little to the growth or renewal of bone or muscle."—Dr. ATTFIELD, *Professor of Practical Chemistry to the Pharmaceutical Society.*

FOR INFANTS.

ENTIRE WHEAT FLOUR.

(CHAPMAN'S Patent Prepared.)

FOR CHILDREN,
INVALIDS, &c.

The lamentable defectiveness of the teeth, and the general tendency to weakness of the bony frame, so often observed in children, has been clearly traced by the most eminent writers (including Baron Liebig) to the general use of white foods, which contain but little teeth or bone-forming material. This fault is completely remedied in the Entire Wheat Flour, which contains in *proper proportions* everything necessary to nourish perfectly all parts of the body. It may be prepared in a variety of ways, and besides being a most palatable and nutritious diet for children, will be found most useful in the sick-room, being most strengthening to the invalid, and moreover often taken with relish when all other foods are rejected.

"It is very easily digested by the most delicate ones, and will be found a food of great value, especially in the numerous strumous diseases of childhood."—BUNTON SHILLITOR, Esq., F.R.C.S., *Consulting Surgeon to the East London Hospital for Children.*

FOR CHILDREN,
INVALIDS, &c.

ENTIRE WHEAT FLOUR.

(CHAPMAN'S Patent Prepared.)

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THE

CHEMISTS' AND DRUGGISTS'

COMPENDIUM

A HANDBOOK OF

PRACTICAL RECEIPTS AND PROCESSES

IN

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PERFUMERY HOMŒOPATHY PHOTOGRAPHY

DYE-MAKING WINE-MAKING

COSMETICS ARTIFICIAL ESSENCES CONFECTIONERY

VETERINARY MEDICINE

ETC. ETC.

BY

R. JONES OWEN

AUTHOR OF "THE PRACTICE OF PERFUMERY."

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PREFACE.

HE want of such a work as the following manual is designed to be has long been very generally felt by Pharmacutists; and therefore I trust any apology for this endeavour to supply that want will be unnecessary.

Science makes her advances with such rapid and lengthy strides, that the acknowledged text book of to-day is to-morrow thrown aside as obsolete; and this is especially true in reference to the science-art of Pharmacy. The last few years have been productive of many useful improvements, many important inventions, and many startling discoveries, in connection with this art, which have yet no other record than the passing notice of the periodical Press. In compiling the following collection of RECEIPTS and PROCESSES in PHARMACY and its allied arts, I have therefore aimed at giving a special prominence to those of most recent date, but not to the exclusion of those which, though less novel, will not be considered less valuable.

In all cases where I could proceed with certainty, I have given the names of the originators of the processes quoted.

It is with pleasure that I acknowledge the valuable assistance I have derived from the works of LIEBIG, WATTS, MUSPRATT, URE, SQUIRE, and A. J. COOLEY; and also from the pages of the *Pharmaceutical Journal*, the *Chemist and Druggist*, the *Chemical News*, and the *Specifications* relating to Medicine, Surgery, Dentistry, Veterinary Preparations, &c. in the archives of Her Majesty's Commissioners of Patents.

Former experience assures me that this Work will meet with a favour proportionate to its merits; but if it fulfils the object for which it is intended, viz., to economise the time, and to ease the labours of the practitioner of pharmacy, I shall consider my care well repaid.

R. JONES OWEN.

St. Mary Charterhouse, February, 1871.

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NEW YORK

1892

THE
CHEMISTS AND DRUGGISTS'
COMPENDIUM.

A

ABERNETHY'S PILLS. Take of mercurial pill mass 36 grains, compound extract of colocynth 24 grains. Make into twelve pills.

ACETIC ACID (*Liebig's process*). Take of acetate of soda pure, thoroughly dried and powdered, 3 parts, place this in a large glass retort, and pour over it 907 parts concentrated pure sulphuric acid. A portion of the acetic acid is sent over by the heat engendered by the mixture of the ingredients. The heat of a sand-bath must now be applied, and the resulting distillate carefully rectified.

ACETIC ACID, CAMPHORATED. Powder half an ounce of camphor with a few drops of spirits of wine: dissolve in 6½ ounces of acetic acid.

ACID SOLUTION (*Hallar's*). This preparation is identical with the *Misturia sulphurica acida* of the Prussian Pharmacopœia of 1862. It is made as follows:—Take of rectified spirit of wine 3 parts, sulphuric acid 1 part, both by weight; mix.

ACONITINE (*Liegeois' process*). Macerate for eight days the coarsely powdered root in sufficient rectified spirit acidulated with sulphuric acid; express; distil off the greater part of the spirit and allow the liquor to cool. Remove from the surface the floating oil and resin, continue the evaporation till a syrupy consistency is obtained. Wash

slightly with sulphuric ether to remove all trace of resin, add magnesia, agitate several times with sulphuric ether to remove the alkaloid; evaporate the sulphuric ether and dissolve the residue in a slight excess of sulphuric acid; precipitate gradually by dilute ammonia, rejecting the first portions which are coloured. This is a more active form of aconitine than that usually met with in commerce.

ACETONIN, OXALATE OF. Aceton is added to sulpho-carbiminate of ammonium; the crude sulpho-carbiminate of acetone thus obtained is washed with alcohol of 90 per cent. dissolved in water precipitated by means of perchloride of mercury; hydrosulphuric acid is passed through the filtrate; the latter is evaporated to dryness on a water bath; water is next added, again evaporate to dryness; the residue treated with sesquioxide of silver in excess, filtered; the filtrate again evaporated to dryness and afterwards exhausted with absolute alcohol until nothing more is dissolved. The oxalate of aceton deposits from the solution, and is purified by recrystallisation.

AERATED WATERS (*Muter*). The proper mode of making aerated water is as follows:—The carbonic acid gas is generated by the action of sulphuric acid upon chalk. It is then passed into a gasometer exactly like those employed in our gasworks, only, of course, much less in size. From this gasometer it is pumped into the condenser, along with the proper quantity of water. In the condenser works an appliance called the agitator, which assists in mixing the gas and water, thus hastening solution by exposing a larger surface of the latter to the action of the former. The pumping is continued till the gauge, with which the condenser is fitted, shows that the requisite pressure has been obtained, and then the aerated water is ready for bottling. It has, however, as yet no flavour, and this has to be produced by putting a small quantity of lemon or ginger syrup into the bottles before running in the water from the condenser, or, in the case of soda water, by introducing a few grains (generally 15 to 20) of carbonate of soda in the same manner.

ALEXANDRA BOUQUET. Take of oil of bergamot $3\frac{1}{2}$ drachms, oil of geranium 30 drops, oil of cassia 15 drops, oil of roses 30 drops, alcohol 1 pint. Dissolve the oils in the alcohol slightly heated, and add tincture of ambergris forty drops.

ALIZARIN (*Robiquet*). Exhaust powdered madder of its

colouring matter with water, at a temperature of about 65° Fahr.: when dry 1 part is to be boiled for twenty minutes in a solution of 8 parts of alum in 40 parts of water; filter while boiling, well wash the mass in a solution of alum, precipitate the liquors with sulphuric acid; finally, wash and dry the precipitate.

ALMOND BALLS (BOULES D'ALMANDE). Take of spermaceti 4 ounces, white wax, pure, 8 ounces; expressed almond oil 1 pint; melt them together in a glazed earthenware vessel, by the heat of a water bath, and when cool, add of essential oil of almonds and expressed oil of mace, of each 2 drachms. As the mixture cools pour it into one-ounce gallipots slightly heated; when removed they are finely formed cakes.

ALMOND BLOOM. Take of Brazil wood in fine powder 1 ounce, cochineal 2 drachms, hot water 4 pints; macerate for several hours and filter, adding isinglass 1 drachm, gum arabic $\frac{1}{4}$ ounce, alcohol 2 ounces. Seent to taste.

ALMOND CAKE. Blanch and beat 1 ounce of bitter almonds and 8 ounces of sweet almonds, adding a little rose water, and the white of an egg, and afterwards 4 ounces of white sugar, with the yolks of 4 and whites of 2 eggs; flavour with oil of lemon. Mix and bake.

ALMOND POWDER FOR EMULSIONS (Menière). Make an emulsion of bitter almonds 50 parts and a sufficiency of water, with 300 parts of sugar: evaporate with a gentle heat until the mixture assumes a pasty consistence, spread it upon plates, dry thoroughly by artificial heat, reduce to powder, adding 5 parts pulverised tragacanth. To prepare an emulsion, take of the powder 32.5 parts, orange flower water 10 parts, common water 120 parts; triturate in a mortar.

ALMOND SOAP. See SOAPS.

ALOIN. The following is said to be the method adopted for the extraction of this, the active principle of aloes, by its discoverers:—Evaporate *in vacuo* to the consistence of a syrup the solution obtained by exhausting a mixture of aloes and sand with cold water; set aside for some days. Purify the resulting mass by pressure between folds of blotting paper and repeated crystallisation from hot water. Dose, 1 to 2 grains.

ALUMINIUM (*Deville's process*). Place 200 grains of chloride of aluminium in a wide glass tube, between two plugs of asbestos; pass a current of hydrogen through a desiccating bottle containing sulphuric acid and tubes containing chloride of calcium, and finally through the tube containing the chloride of aluminium, applying a gentle heat; introduce to the other extremity of the tube a vessel containing sodium, which fuse; heat the chloride of aluminium until its vapour has consumed the sodium. The double chloride of aluminium and sodium thus obtained contains suspended globules of the reduced metal. The mass may, as soon as cool, be treated with water, which dissolves the chloride, leaving the metal unacted upon.

AMANDINE, OPAQUE. Dissolve in half a pint of almond oil, 1 drachm of essential oil of almonds; mix well with 1 ounce of each of almond paste, honey, white potash, soap, and glycerine, and the yolk of one egg. A fine warm tint may be given to the mass by the addition of a little carmine dissolved in ammonia.

AMANDINE, TRANSPARENT. Take of fine white honey 4 ounces, fine white soap 2 ounces, mix these well in a mortar, adding 1 ounce of liquor of potassa, until the mixture becomes a perfect cream; rub in with caution and slowly 7 pounds of almond oil and 1 ounce of essential oil of bitter almonds, adding to taste a sufficiency of oils of bergamot and cloves; and lastly, half a drachm of balsam of Peru.

AMBERETTE, ESPRIT D'. Take of musk seed bruised 4 ounces, proof spirit 20 ounces, digest for fourteen days, and distil over two-thirds.

AMBERGRIS, TINCTURE OF. Take of ambergris sliced 5 drachms, grain musk $1\frac{1}{2}$ drachms, rectified spirit 1 pint; digest in a tightly-stoppered bottle, at the temperature of 90° Fahr. for 30 days, with frequent shaking.

AMBREINE. This, the fragrant principle of Ambergris, may readily be obtained by digesting ambergris in hot alcohol, from which, on cooling, it is deposited in a crystalline form.

AMMONIA, AROMATIC SPIRIT OF. Take of strong liquor of ammonia 10 ounces, otto of roses 10 drops, oil of cinnamon 30 drops, oil of cloves 1 drachm, oil of bergamot 2 drachms, oil of lavender 2 drachms, tincture of musk 4 drachms. Place in a closely-stoppered bottle.

AMYLE, ACETATE OF. Take of fusel oil 1 part, acetate of potassa dry, 2 parts, concentrated sulphuric acid 1 part: distil with the usual precautions from a glass retort into a cool receiver. The distillate is purified by washing it in very dilute solution of potassa, and afterwards redistilling from fused chloride of calcium. The sulphurous odour, if any be present, may be removed by the addition of a little litharge in the retort previously to rectification.

AMYLE, OXIDE OF. This ether dissolved in alcohol is largely sold under the name of *Brandy Essence*, and used in the preparation of British Brandy (q.v.) It may be procured by distilling together fusel oil and concentrated sulphuric acid, and rectifying repeatedly till the boiling point reaches 349° Fahr., and the specific gravity falls to 779°.

AMYLE, VALERINATE OF. By treating the crude product of the distillation of potato oil with a weak solution of pure potassa, a nearly pure volatile oil is obtained, which when dissolved in rectified spirits gives the flavouring essence sold under the name of "Apple Essence."

ANGELICA, CANDIED. Cut down stalks of angelica (*Angelica archangelica*) and boil till tender, take it out, peel, and return to the boiler, where it must be allowed to simmer till green; it must now be thoroughly dried, placed in a pan with equal parts of sugar; let the whole stand for forty-eight hours, boil till clear, drain off the moisture, add again equal parts of sugar, sprinkled over; place loosely in an oven, and dry with a moderate heat.

ANILINE. Of the many methods employed for procuring this valuable organic base the following, suggested by *Hoffmann*, will be found the most useful for practical purposes. Oil of coal tar is agitated with hydrochloric acid; after decanting the clear liquid resulting, it is evaporated over an open fire until acrid fumes begin to arise; it is then filtered and decomposed with potash or milk of lime, which liberates a brown oil, consisting of (among other ingredients) a mixture of aniline and leucol. On submitting this mixture to distillation the aniline passes over at about 360° Fahr.; rectified repeatedly at this temperature, the aniline is further purified. It is now to be again treated with hydrochloric acid, and the base separated by an alkali. Finish by careful rectification.

ANILINE (*Bechamp's process*). Equal weights of nitrobenzol (q.v.), acetic acid, and cast-iron turnings are mixed slowly and cautiously in cast-iron vessels, care being taken that the heat generated does not raise the temperature of the mixture too high. The products of this combination are acetate of aniline and acetate of iron. On the crude mass being distilled with lime and re-distilled, the pure aniline is obtained by collecting the distillate passing over at a temperature of from 170° to 190° .

ANILINE BLUE (BLEU DE PARIS, BLEU DE LYONS). Digest a mixture of 2 parts of hydrochlorate of rosaniline (q.v.), and 4 parts of aniline, at a temperature of 150° ; purify the crude blue by treating it with boiling water acidulated with hydrochloric acid, and afterwards with pure water.

ANILINE CRIMSON. Dr. Hoffmann says that the aqueous solution on the addition of potassa gives an oily precipitate containing a considerable proportion of unchanged aniline; on boiling this precipitate with dilute potassa in a retort, the aniline distils over, a viscid oil remaining behind, which generally solidifies with a crystalline structure. Washing with cold alcohol and two or three crystallisations from the same solvent will render this body perfectly white and pure, a very soluble substance of a magnificent crimson colour remaining in solution. Messrs. Verguin Reynards of Lyons devised and patented the following process for obtaining aniline red:—Take of aniline 10 parts, tetrachloride of tin 7 parts, mix and heat to boiling point for fifteen minutes; cool, and treat with boiling water, which now forms a form a magnificent crimson dye for silk or wool without further manipulation or addition.

ANILINE VIOLET (VIOLENE, INDISINE). Ure, in his Dictionary of Arts and Manufactures gives the following process for the production of this beautiful dye:—“A cold and dilute solution of the sulphate, or any other salt of commercial aniline, is mixed with a solution, also cold and dilute, of bichromate of potash. The mixture is well stirred and allowed to stand for ten or twelve hours. A black precipitate is produced, which is collected upon a filter, washed with cold water and dried. The black matter is digested with coal tar, when a brownish black tarry substance is dissolved from the colouring matter obtained in the precipitate. The insoluble residue is then dried and digested with wood spirit or alcohol. The clear solution is

separated by filtration and distilled in order to recover the alcohol. The residue left in the retort is Mr. Perkin's *Aniline Violet*.

ANILINE YELLOW (CRYSANILINE). This is obtained from the residue from which the rosaniline has been extracted by means of a current of steam, a quantity of the base passing into solution. The addition of nitric acid to the solution will precipitate crysaniline in the form of a nitrate.

ANILINE, OXALATE OF. This is procured by treating an alcoholic solution of oxalic acid with aniline, when a deposit of oxalate of aniline in a crystalline mass will ensue.

ANILINE, SULPHATE OF. This is employed in the manufacture of the aniline dyes. Treat aniline with dilute sulphuric acid, evaporate the solution till the salt begins to separate; this dissolve in boiling alcohol. Sulphate of aniline in fine silvery crystals is procured as the alcohol cools down to the temperature of the atmosphere.

ANISEED CORDIAL. Take of aniseed (best Chinese) 2 ounces, fennel 1 ounce, and a few cloves; macerate the whole in 30 ounces of French brandy; filter, and add 10 ounces of simple syrup and the white of 2 eggs.

ANODYNE FOMENTATION. Poppy heads 2 ounces, elder flowers $\frac{1}{2}$ ounce, water 3 pints; boil for fifteen minutes, and strain the liquor.

ANODYNE, INFANTILE (A. J. Cooley). Take of syrup of poppies 1 ounce, aniseed water 3 ounces, rectified spirit $\frac{1}{2}$ ounce, calcined magnesia, $\frac{1}{4}$ ounce, mix. Dose, a small teaspoonful when required.

ANTHOKYAN (A. J. Cooley). The expressed juice of the sweet violet defecated, gently heated in glass to 192° Fahr. skimmed, cooled, and filtered; a little rectified spirit is now added, and after standing for twenty-four hours the whole is re-distilled till all is thoroughly incorporated; then add 1 ounce of gum arabic dissolved, 1 pint of vinegar, stir occasionally for twenty-four hours, adding finally half a gallon of good vinegar.

ANTIARINE. This frightfully-potent poison is extracted from the inspissated juice of the upas tree (*Antiaris toxicaria*) by means of rectified spirit, from which it may be crys-

tallised by means of careful evaporation. For this poison no antidote has yet been discovered.

ANTIMONY, DIAPHORETIC. Take of sulphuret of antimony 1 part, nitre 3 parts, pulverise, mix, and deflagarate by spoonfuls in a red hot crucible, then calcine for half an hour, and when cold, pulverise in a mortar.

ANTI-NEURALGIC POWDER. Take of sulphate of quinine 7 grains, sulphate of morphine 3 grains. In periodic neuralgia the above powder taken in snuff is very efficacious.

APIOL (*A. J. Cooley*). "The soft alcoholic extract of parsley seed is either digested or agitated for some time with ether; after sufficient repose in a cool place the ethereal solution is decanted and the ether removed by distillation; the residuum is purified by solution in rectified spirit, and agitation first with a little litharge, and next with animal charcoal, after which the spirit is removed by distillation from the filtered solution." Said to be a powerful febrifuge, and recommended by M. M. Joret and Homalle as a substitute for quinine.

APOCODEIA. See HYDROCHLORATE OF APOCODEIA.

APOMORPHIA (*Dr. Matthiessen*). On submitting chloride of morphia to the action of strong hydrochloric acid for about three hours at a temperature of about 150° Fahr., the chloride of the new base apomorphia is obtained. The base itself may be procured from the chloride by treatment with ether or chloroform, in both of which it is readily soluble; but as it is found to be very unstable, the salt has been used in preference. Its physiological action is totally different to morphia or the other salts of opium. It is purely emetic, and careful experiment proves it to be the most valuable emetic known; speedy and certain in its effects, it is the only substance known which produces with certainty emetic action when exhibited hypodermically. Dose 1·10 of a grain of the chloride.

APPLE ESSENCE. A solution of valerianate of amyle (q.v.) in alcohol.

ARNICA CERATE. See CERATE OF ARNICA.

AROMATIC VINEGAR. See VINEGAR.

ARRACK. A spirit distilled from the fermented juice of the cocoa-nut, the palmyra, and other palm trees. A coarser kind of arrack much used in the East Indies is distilled

from an infusion of unhusked rice. An imitation arrack is made in this country by the following process:—Take pale old Jamaica rum, rectified spirit, and water, of each 1 quart, flowers of benzoin 1 drachm, pine apple essence (q.v.) 30 drops; digest with occasional agitation for a fortnight, then add of skim milk 1 wine-glassful, agitate well for fifteen minutes, and in a few days decant the clear portion.

ARTIFICIAL CAMPHOR. See CAMPHOR.

ARTIFICIAL IVORY, PHOTOGRAPHIC. Dissolve shreds of gutta percha in chloroform, pass a stream of chlorine through the solution until it has acquired a bright yellow tint; wash well with alcohol, add in fine powder sulphate of baryta, knead well, and finally subject to heavy pressure. The proportions of the various ingredients must be modified according to the density required.

ASPHALTUM LIQUID (*Wilson*). Take of asphaltum half a pound, melt; add of hot balsam of copaiba 1 pound, and when mixed thin it with hot oil of turpentine. Used as a black japan and as a glazing colour by artists.

ASHBERRIUM. This new metallic alloy consists of 80 parts of tin, 14 of antimony, 2 of copper, 2 of nickel, 1 of aluminium, and 1 of zinc.

ATRACTYLIC ACID. This remarkable acid may be obtained from the root of the *Atractylis gummifera*, where it occurs in the form of atractylate of potass, which may be extracted from the root with boiling water; evaporate solution; dissolve the residue in alcohol of 85 per cent; purify with animal charcoal, and repeatedly recrystallise from alcohol. The acid is obtained in the form of thin fluid by decomposing the salt with acetate of lead, and decomposing the atractylate of lead so formed by means of dilute sulphuric acid.

ATROPINE. To the freshly-prepared extract of belladonna add a strong solution of caustic potash, mix well in a mortar. Digest the resulting mass at a temperature of 80° with benzole; separate the latter and distil off the hydrocarbon in a retort on the water bath. The residue in the retort must be treated with water acidulated with sulphuric acid; precipitate the acid solution by carbonate of soda, and the resulting atropine may then be obtained pure by being crystallised from an alcoholic solution.

AUGUSTIN'S LINIMENT. See HAIR STIMULANTS.

B

BALSAM, ANODYNE. Castille soap 2 ounces, opium (crude) $\frac{1}{2}$ ounce, rectified spirit 10 ounces; digest with a gentle heat for three days; filter, and add of camphor 3 drachms. This preparation, which is very similar to the *Linimentum opii* of the Ph. B. is used for similar purposes.

BALSAM (*Locattelli's*). Take of Florence oil, Strasburg turpentine, and beeswax of each 4 ounces, santal wood in powder 3 drachms; melt the wax and add the oil, and afterwards the turpentine; mix in the santal wood, with constant stirring, till cold. This preparation has still a considerable popularity in some of the rural districts as a dressing for wounds.

BALSAM OF HONEY. Heather honey 4 ounces, glycerine 1 ounce; unite with a gentle heat, and add while cooling, alcohol 1 ounce, essence of amber 6 drachms, citric acid, pure, 3 drachms.

BANDOLINE. Soak carrageen or Irish moss in cold water for an hour or more, drain and press dry in a clean napkin; dissolve by boiling in a sufficiency of soft water, strain through linen, and when nearly cold add a fourth part of eau de Cologne.

BANDOLINE (*Redwood*). Take of gum arabic $1\frac{1}{2}$ drachm, water 7 ounces, proof spirit 3 ounces, otto of roses 10 drops; macerate for twenty-four hours, and strain.

BARIUM, CHLORATE OF. Commercial crystallised aluminium sulphate, sulphuric acid, and potassium chlorate, in the proportion of one molecule of the two former to two of the latter, are mixed with water to the consistence of a thin paste, warmed for half an hour on a water bath, allowed to cool completely, and treated with alcohol in excess. Upon filtering and neutralising with barium hydrate, barium sulphate, and some aluminium hydrate are precipitated, and barium chlorate remains in solution. The alcohol is distilled off, and the filtrate on evaporation yields crystals of pure barium chlorate. It must be observed that the aluminium sulphate and sulphuric acid are in slight excess.

BENZOLE. This valuable hydrocarbon was discovered by Faraday in 1825. It may be procured by slowly heating to redness in an earthenware retort a mixture of 1 part benzoic acid with 3 parts of fresh slaked lime; the oily portion of the distillate must now be separated from the aqueous, and rectified with great care at a temperature not greater than 190° Fahr. The product is tolerably pure benzole; absolute purity may be obtained by further rectification. On the large scale benzole is manufactured by a somewhat different process, from coal tar.

BENZOIC ACID. Dissolve one part of gum benzoin in 3 parts of alcohol; place the solution in a retort, and add a solution of carbonate of soda in dilute alcohol till the free acid is neutralised: now add a bulk of water equal to double the weight of the benzoin, distil off the alcohol; the liquor remaining contains the acid.

BINOXIDE OF HYDROGEN. This is coming into use as a cosmetic for bleaching dark hair, and for removing freckles. It is prepared from oxide of barium, which is decomposed by weak hydrochloric acid, the resulting chloride of barium, which is held dissolved in the binoxide of hydrogen solution is precipitated by the careful addition of diluted sulphuric acid until a fresh precipitate ceases to form. The liquid is then filtered and ready for use.

BISMUTH, SUB-NITRATE OF (PEARL WHITE). Take of bismuth 1 ounce, nitric acid $1\frac{1}{2}$ fluid ounces, distilled water 3 pints; mix the acid with 1 ounce of the water and dissolve the bismuth therein, afterwards adding the remainder of the water; when it has stood for some hours the supernatant liquid is to be drained off with a syphon; dry the powder *in a dark place*, on a linen cloth; and finally wash it well with cold water.

BLACK CAUSTIC (Velpcau). Triturate in a porcelain mortar 30 grains of powdered liquorice root and add sulphuric acid in small quantities till a suitable mass is formed.

BLACK DRAUGHT (Abernethy's). Infusion of senna 15 ounces, tincture of senna 12 drachms, Epsom salts 4 ounces, carbonate of ammonia $\frac{1}{2}$ drachm, sugar 3 ounces. Dissolve.

BLACKING, LIQUID (A. J. Cooley). Take of ivory black in very fine powder 2 pounds, treacle $1\frac{1}{2}$ pounds, sperm oil $\frac{1}{4}$ pint. Place the black in a large wooden vessel, add the oil, rub well together, next add the treacle, and mix.

BLACKING, PASTE (*Liebig*). Take of ivory black 1 part, treacle $\frac{1}{2}$ part, sweet oil $\frac{1}{2}$ part, oil of vitriol $\frac{1}{4}$ part, hydrochloric acid $\frac{1}{2}$ part. Each of these ingredients must be diluted with thrice its weight of water previously to admixture. The first three ingredients are to be intimately mixed together and the others added in rotation.

BLEACHING LIQUID. The various preparations sold under this name are usually solutions of chloride of lime of various degrees of strength.

BLISTERS, EXTEMPORANEOUS (*Dr. Darcy*). Pour out on a dish 8 or 10 drops of highly concentrated liquor of ammonia, cover the liquid over with a small piece of linen of rather less diameter than the dish; apply this to the previously shaved skin. Trousseau recommends the application of unsized paper wetted with the etherial extract of cantharides.

BLOOM OF ALMONDS. Boil 1 ounce of ground Brazil wood in $2\frac{1}{2}$ pints of water for half an hour, add the juice of 2 lemons; strain, and add 6 drachms of isinglass, 2 drachms of powdered cochineal, 1 ounce of alum, and $\frac{1}{2}$ ounce of borax; boil for five minutes and strain through muslin. Use only glass vessels.

BLOOM OF ROSES. Take of carmine 2 drachms, strong liquor of ammonia 1 ounce; put them into a stoppered bottle, set in a cool place, and occasionally shake up for three days; add rose water 1 pint, esprit de rose (*enfleurage*), 4 drachms, rectified spirit 1 ounce; again agitate and set the whole aside for a week. Lastly, decant the clear portion from the dregs.

BON-BONS. These are of various kinds and mostly of French manufacture. **LIQUEUR BON-BONS:** Evaporate simple syrup to a firm consistency, and add thereto the required liquor, in the proportion of one part of spirit to two parts of syrup. Make a sufficient number of plaster of Paris moulds, of which casts are to be taken in layers of powdered starch placed in tin trays of a suitable form; pour the spirituous syrup into the starch moulds, where the upper part of the bon-bon will take a spherical form, owing to the repulsive action of the starch on the saccharine mass; sprinkle some starch over the top and set aside to crystallise. The sugar crystallises in the form of a hollow crust, enclosing the spirit within. **CRYSTALLISED BON-BONS:** Bon-bons may be crystallised by putting them into a thick hot

syrup placed in shallow vessels, covered with folds of linen and set aside to cool.

BOOT-TOP LIQUIDS. **WHITE:** Take of alum, cream of tartar, magnesia, and oxalic acid, of each 1 ounce; salt of sorrel and sugar of lead, of each $\frac{1}{4}$ ounce; water a quart. **Mix.** **BROWN:** Alum, annato, and oxalic acid, of each 1 ounce; isinglass and sugar of lead, of each $\frac{1}{2}$ ounce; salt of sorrel $\frac{1}{4}$ ounce; water one quart. Boil for ten minutes.

BOUQUET. In perfumery this term is applied to various compound solutions of odoriferous ingredients, generally essential oils. The following are among the most popular. **BOUQUET DE LA REINE:** Oil of bergamot 12 drachms, oil of lavender 4 drachms, aromatic vinegar 2 drachms, essence of musk 2 drachms, alcohol 12 ounces. **BOUQUET DE MILLE FLEURS:** Lavender water 1 ounce, esprit de jasmine 1 ounce, oil of bergamot $1\frac{1}{2}$ drachms, oil of cassia $\frac{1}{2}$ drachm, oil of sassafras 12 drops, oil of cloves 12 drops, otto of roses 4 drops, orange flower water 8 ounces, rectified spirit 1 pint. **BOUQUET DE RONDELETIA:** Oil of lavender 6 drachms, oil of cloves $2\frac{1}{2}$ drachms, oil of bergamot 2 drachms, essence of bergamot 2 drachms, essence of musk 30 drops, essence of ambergris 30 drops, alcohol 20 ounces.

BOULES D'ALMANDE. Spermaceti 2 ounces, white wax 4 ounces, almond oil 8 ounces; melt in a water bath, and add, with constant stirring, essential oil of almonds 1 drachm, oil of mace 90 drops; stir constantly till it begins to set, and pour into moulds slightly warmed and greased.

BRANDY ESSENCE. See **AMYLE, OXIDE OF.**

BRILLIANTINE. Take of honey 1 ounce, glycerine $\frac{1}{2}$ ounce, eau de Cologne $\frac{1}{2}$ ounce, rectified spirits of wine 2 ounces. Another formula:—Castor oil 2 ounces, alcohol (pure) 6 ounces. **Mix.**

BRITISH BRANDY (Ure). Dilute pure alcohol to the proof pitch, add to every hundred pounds weight 1 pound of argol dissolved in water, a little acetic ether, and French wine vinegar, some bruised almonds, and a sufficiency of Cognac essence (q.v.); then distil the spirit with a gentle heat.

BRONZING LIQUID (Ure). This is a saturated solution of nitro-muriate of platinum. With this almost any colour can be produced on copper, brass, or iron, by diluting the solution to the required strength.

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CACHOU AROMATISE (MOUTH PASTILLES). Gum catechu powdered 2 ounces, Spanish liquorice 4 ounces, lump sugar 12 ounces, oils of cloves, cassia, and peppermint, of each 1 drachm; mix to a suitable consistence with mucilage of tragacanth: divide into 1 grain pills, and coat with silver leaf.

CADMIUM, IODIDE OF (PHOTOGRAPHIC). Take of cadmium filings 1 part, pure iodine 2 parts, place them together in a large flask with sufficient alcohol to cover them, when chemical action ceases heat the mixture till it is colourless; filter, evaporate, and crystallise.

CAFFEINE (*Vogel*). Make an extract of powdered coffee with commercial benzole; when this is distilled off, the caffeine remains behind together with a heavy oil; these may be separated by the addition of hot water from which the caffeine will crystallise on cooling.

CALUMBINE (*Wittstock*). Evaporate tincture of calumba root (made with rectified spirit) to dryness, dissolve the extract so obtained in water, shake up this solution with an equal bulk of ether; after repose, distil off the ether, and set the remaining liquid aside to crystallise.

CAMPHOR, ARTIFICIAL. When hydrochloric acid is passed into oil of turpentine surrounded by ice, the result is the separation of two compounds, the one solid, the other fluid; the first, which is white, transparent, and of less specific gravity than water, is artificial camphor, the smell of which is nearly identical with common camphor.

CAMPHOR BALLS. Spermaceti 2 ounces, white wax 2 ounces, olive oil 8 ounces, camphor in powder 1 ounce; melt and mix over a water bath, and pour into hot well-greased moulds.

CAMPHOR ICE. Melt together over a water bath, white wax 1 ounce, spermaceti 1 ounce, add of camphor (previously rubbed down in a mortar with a few drops of alcohol) 2 ounces, almond oil 1 pound; when melted the ingredients must be amalgamated well together by means of constant

stirring, during which add slowly rose water 16 ounces, otto of roses 30 drops, bergamot 30 drops, tincture of tolu 30 drops.

CAMPHOR ICE. Take of spermaceti 4 ounces, white wax 8 ounces, oil of sweet almonds 1 pint; melt together by a gentle heat, add of camphor in small pieces 4 ounces; when dissolved stir till partly cold, and add essential oil, bitter almonds, and expressed oil of mace, 2 ounces.

CANDY, DIGESTIVE. Take of rhubarb and carbonate of soda of each 1 drachm, ginger $\frac{1}{2}$ drachm, cinnamon 20 grains, heavy magnesia 1 ounce, powdered sugar 2 ounces; all the above must be reduced to fine powder; mucilage of gum tragacanth a sufficiency to form a mass; to be divided into eakes of 20 grains each.

CANDY, GINGER. Take of ginger in powder 3 ounces, boiling water 25 ounces; macerate for three hours; strain; add lump and moist sugar of each 5 pounds; flavour with oil of lemon, and boil to a candy.

CANTHARIDINATE OF POTASH (*Delpech*). Dissolve with a gentle heat 2 grains of cantaridine in 150 grains of alcohol; add 1.6 grains of caustic potash dissolved in a little distilled water; the liquid immediately assumes the form of magma, and the alcohol is to be separated by filtration and pressure. 98 parts of cantaridine gives 160 parts of cantharidinate.

CANTHARIDINE. To extract the active principle of *Cantharis vesicatoria* the crushed flies must be exhausted by chloroform, and the solution distilled to dryness at a very gentle heat; the green residue is treated with bisulphide of carbon, by means of which the resinous and other matters are dissolved out and the cantharidine remains; it must now be placed upon a filter and well washed with bisulphide of carbon, and afterwards crystalised from chloroform.

CANTHARIDINE POMMADE. Take of beef marrow 20 ounces, extract of cantharides 90 grains; perfume to taste. The extract requisite for the above may be conveniently made by evaporating tincture of cantharides to dryness.

CANTHARIDINE VESICANT (*Delpech*). Take of gelatine 30 grains, water 150 grains by weight, alcohol 150 grains by weight, cantharidinate of potash (q.v.) 6 grains, glycerine a sufficiency. The liquid thus formed is to be spread on thin

sheets of gutta percha, in such a way as to give a proportion of one-seventh of a grain of cantaridinate of potash to every four square inches of the tissue.

CANTHARIDINE CREAM. Take of impressed oil of sweet almonds 16 ounces; lime water 8 ounces; tincture of cantharides 2 ounces.

CANTHARIDINE CERATE. See CERATES.

CANTHARIDINE OIL. See HAIR STIMULANTS.

CAPSICINE (*Taylor*). Powdered capsicum is digested with anhydrous ether, and evaporated; the extract so procured is digested in alcohol (sp. gr. '809); the solution is filtered and afterwards treated with sub-acetate of lead; the resulting precipitate is separated by filtration and the clear tincture freed from the lead by means of sulphurated hydrogen, which precipitates the lead in the form of a sulphuret; this being removed by filtration, the solution is now boiled, filtered, evaporated, and set aside in a cool place to crystallise.

CAPSULES. By this term is generally understood in pharmacy the small egg-shaped envelopes of gelatine or other material used to disguise the taste of nauseous drugs. The following are the principal modes of manufacture:—**GELATINE CAPSULES:** Make balls of wax of the desired form and size by pouring melted wax into a wooden mould consisting of two hemispheres; the wax balls are afterwards stuck on little pins placed in rows upon metal rods; the balls are now coated all at once by dipping the rods into tanks containing a strong solution of gelatine. They are now removed from the pins, and placed upon slightly-heated metal plates with the pin hole downwards, when the wax flows out, leaving the perfectly formed capsule. **SACCHARATED CAPSULES** are made in the same way as the above, only using the following solution instead of pure gelatine:—Gelatine 6 parts, solution of gum and simple syrup, of each 1 part, water 5 parts; melt over a steam bath, skim, and proceed as above. **GLUTEN CAPSULES,** these patent capsules are formed of the gluten of wheat flour, and are insoluble in water. Ricord uses in his practice a copaiba capsule coated with extract of rhatana, of which he speaks highly.

CARAMEL, SPIRIT COLOURING. Heat cane sugar in a metallic vessel to 460° Fahr., till aqueous vapours rise, stir-

ring occasionally, powder, and digest the mass in alcohol for two or three hours.

CARBOLIC ACID.—It is greatly owing to the labours of Dr. F. Crace Calvert that the value of this antiseptic, and the variety of its applications, are so well known, and its manufacture on the great scale economically carried out. The following is one of the many modes of production:—Crude coal-oil is distilled in a retort furnished with a thermometer, and the product passing over between the temperatures of 300° and 400° Fahr. collected and mixed with a hot saturated solution of caustic potassa; on this being allowed to stand a pasty mass is formed, this is separated from the liquid, and dissolved in a sufficiency of water; the resulting solution soon separates into two portions, the denser, containing carbolate of potass, is separated and treated with hydrochloric acid. Carbolic acid in solution rises to the surface; this is treated with chloride of calcium to remove the water, and afterwards further purified by distillation. The distillate on being subjected to a cold temperature deposits crystals of carbolic acid. These when dried must be protected from atmospheric contact. Crookes gives a process for the preparation of a perfectly pure carbolic acid from salicylic acid.

CARBOLIC GLYCERINE. Mix together carbolic acid 1 part and glycerine 4 parts.

CARBOLIC PLASTER. Carbolic glycerine 34 parts, prepared chalk 94 parts; mix by kneading.

CARBON, BISULPHIDE OF (*Mulder's process*). Take an iron bottle with two openings, into one of which fit a copper tube with bends (right angles); into the second opening place a straight tube dipping into the bottle; nearly fill the bottle with pieces of charcoal, screw on the tubes and place the bottle in a furnace, protecting it from the direct action of the flames; connect the curved tube with a *Woolfe's* bottle half filled with water, and placed over a refrigerating bath. When the bottle containing the charcoal is sufficiently hot, introduce through the straight tube several small pieces of sulphur, and close the mouth of the tube: the bisulphide passes through the bent tube and collects at the bottom of the receiving bottle. It must now be collected and purified by distillation with chloride of calcium.

CARMINE (*Madame Cennette's process*). Into 6 pails of

river water, boiling hot, throw 2 pounds of the finest cochineal in powder; boil for two hours and add 3 ounces of refined saltpetre, and afterwards 4 ounces of salt of sorrel; in ten minutes more take the copper from the fire, and let it settle for four hours, then draw off the liquor with a syphon, into flat plates, and leave it there for three weeks. There is formed upon the surface a thick mould which is removed dexterously in one pellicle, on a strip of whalebone; decant the supernatant liquor with a syphon, and whatever water remains on the layer of carmine at the bottom must be sucked off with a pipette, and the carmine allowed to dry in the shade.

CARMINE OF CHINA. Boil the cochineal in river water, adding some Roman alum; then pass through a fine cloth to remove the cochineal, and set the liquor aside; heat the liquor, and pour drop by drop a solution of bichloride of tin till the carmine be precipitated. The proportions are 2 gallons of water, 20 ounces cochineal, 60 grains of alum, and 4 ounces bichloride of tin.

CATHARTINE. Evaporate the alcoholic extract of senna to dryness, treat it with water as long as anything is dissolved, add to the aqueous solution a solution of acetate of lead to precipitate the impurities; filter through calico; the cathartine remains in solution, and may be procured by evaporating the liquor.

CAUSTIC. The following varieties of caustic occasionally take the place of the nitrate of silver and caustic potash:—**ARSENICAL CAUSTIC:** Arsenious acid 6 drachms, dragons blood 2 drachms, animal charcoal $2\frac{1}{2}$ drachms, cinnabar 3 ounces. **CANTHARIDES CAUSTIC:** Tannin 1 ounce, powdered cantharides 2 ounces; strong acetic acid 8 ounces; mix into a paste with acetic acid.

CEMENT, AMBER (QUICK DRYING). Dissolve 1 part of amber in $1\frac{1}{2}$ parts of sulphide of carbon.

CEMENT FOR LEATHER. A valuable cement for leather may be made by mixing 10 parts of sulphide of carbon with 1 of oil of turpentine, and adding enough gutta percha, cut small, to make a thick cream.

CEMENT FOR STEEL AND OTHER METALS. (This is sometimes called **TURKISH CEMENT** and **ARMENIAN CEMENT**). Dissolve four or five picces of gum mastic, each the size of

a pea, in a sufficiency of alcohol to make a solution. In another vessel dissolve in brandy as much isinglass (previously softened in water) as will make a two-ounce phial of strong glue; adding two small bits of gum ammoniac, which must be rubbed until dissolved. Then mix the whole with heat. Keep in a bottle closely stopped, which must be set in boiling water when required for use.

CEMENT, ACID PROOF. Make a concentrated solution of silicate of soda, and form a paste with powdered glass. This simple mixture will sometimes be found invaluable in the operations of the laboratory where a luting is required to resist the action of acid fumes.

CEMENT, ELASTIC. Bisulphide of carbon 4 ounces, fine India-rubber in shreds 1 ounce, isinglass 2 drachms, gutta percha $\frac{1}{2}$ ounce; dissolve.

CEMENT FOR MOUNTING PRINTS (PHOTOGRAPHIC). Take of fine white wheat starch 4 drachms; beat into a paste with cold water 1 ounce of best Russian glue; dissolve in a pint of boiling water, while boiling pour on the starch; put the whole into a saucepan, and boil till as thick as treacle. When required for use a small quantity is to be melted in a little warm water.

CEMENT, DENTAL. Take of gum mastic 8 parts, yellow wax 4 parts, carmine a sufficiency; place in a vessel with a sufficient heat to melt the gum and wax, stir, and add the carmine; when all the ingredients are mixed, pour into a basin of cold water and form into sticks.

CERATE OF ARNICA (*Homœopathic Ph.*) Spermaceti 3 ounces, white wax 6 ounces, olive oil 14 ounces; add 1 drachm of medicated tincture to every 9 drachms of cerate, and stir briskly till cold.

CERATE, CANTHARIDINE (*Parrish*). Take of cantharides 12 parts, lard 10 parts, yellow wax and resin of each 7 parts; melt the latter, and stir in the former ingredients.

CERATE, CACAO. Butter of cacao, white wax, and oil of almonds, equal parts; melt, mix, and strain.

CERATE, CAMPHOR. Olive oil 1 pound, white wax $\frac{1}{2}$ a pound, camphor 3 drachms.

CERATE, COPAIBA (*Dr. Houlton*). White wax 1 ounce;

balsam of copaiba 2 ounces; melt the wax and add the balsam.

CERATE, TOBACCO (*Cooley*). Bees-wax 3 ounces, yellow resin 1 ounce, olive oil 6 ounces; tobacco juice 4 ounces, mix and evaporate, and when nearly cold add bergamot 2 drachms.

CHALYBEATE CHOCOLATE. See CHOCOLATE.

CHATELL'S HAIR DYE. See HAIR DYES.

CHEMICAL FOOD.—Take of sulphate of iron 10 drachms, phosphate of soda 12 drachms, phosphate of lime 12 drachms, phosphoric acid 20 drachms, carbonate of soda 40 grains, bicarbonate of soda 1 drachm, muriatic acid and liquor of ammonia of each a sufficiency, powdered cochineal 2 drachms, water a sufficiency, sugar 40 ounces, orange-flower water 1 ounce. Dissolve the sulphate of iron in 2 ounces of boiling water, and the phosphate of soda in 4 ounces of boiling water. Mix the solutions and wash the precipitated phosphate of iron till the washings are tasteless. Dissolve the phosphate of lime in 4 ounces of boiling water, with a sufficiency of muriatic acid to make a clear solution; when cool, precipitate it with liquor of ammonia, and wash the precipitate. To the precipitated phosphates thus prepared, add the carbonates of soda and potash, previously dissolved in water and muriatic acid, to dissolve any precipitate. Dilute with water to the measure of 22 ounces; add the sugar and cochineal; dissolve with heat and strain, adding, when cool, the orange-flower water.

CHEPALIC SNUFF (*Schneeberger*). Take of white hellebore in fine powder 1 ounce, orris root in fine powder 4 drachms, barberry bark in fine powder 4 drachms, starch 6 ounces, oil of cloves 10 drops; mix.

CHERRY TOOTH PASTE. Alum $\frac{1}{2}$ ounce, orris root, chalk, bitartrate of potash and cuttle fish bone of each $1\frac{1}{2}$ ounce, cochineal 1 ounce, all in fine powder, oil of cloves 15 drops, essential oil of almonds 20 drops, glycerine a sufficiency; mix, and allow it to stand for some hours previous to putting in pots.

CHILBLAIN PASTE (*Swediaur's*). Take of bitter almonds 8 ounces; honey 6 ounces: powdered camphor and flour of mustard of each $\frac{1}{2}$ an ounce, burnt alum and olibanum of each 2 drachms, yolks of 3 eggs; beat into a paste. Apply night and morning.

CHILBLAIN CREAM (*Dr. Pardon*). Balsam of tolu $\frac{1}{2}$ drachm, rectified spirit $1\frac{1}{2}$ ounces; dissolve; and hydrochloric acid $\frac{1}{2}$ drachm, compound tincture of benzoin $\frac{1}{2}$ drachm. To be applied on a piece of linen.

CHINESE CARMINE. See CARMINE.

CHINESE HAIR DYE. See HAIR DYES.

CHIO TURPENTINE (*Imitation*). Melt of black resin 3 pounds, and when removed from the fire, add with brisk stirring an equal quantity of Canada balsam, and of oils of juniper and fennel 25 drops each.

CHLORAL HYDRATE (*Liebig*). Place a portion of anhydrous alcohol in a tubulated retort and pass through it a current of dry chlorine gas, gradually raising the temperature until the chlorine passes unchanged through the liquor on raising it to boiling point, this on cooling forms a mass of crystallized hydrated chloral; melt this by a gentle heat, and agitate with three times its volume of oil of vitriol; on increasing the heat an oily stratum of impure chloral rises to the top; it is purified by boiling, and afterwards distilled with an equal volume of oil of vitriol and rectified with quicklime; with the addition of a small quantity of water it changes into a semi-solid crystalline mass of hydrate of chloral; a larger quantity of water dissolves it. This solution evaporated *in vacuo* deposits the hydrate of chloral in large rhombic laminae.

CHLORAL HYDRATE SYRUP. See SYRUPS.

CHLORALUM. Under the name of Chloralum, Professor Gamgee has prominently brought into public notice the claims of the hydrated chloride of aluminium as an anti-septic and disinfectant. On account of its low price as prepared by the Professor's process, and its non-poisonous character, it is likely to come largely into use. For disinfecting purposes a weak solution, varying from sp. gr. 1006 to 1016 will be found most useful.

CHLORALUM WOOL. The advocates of the anti-septic treatment of wounds will find cotton wool treated with a solution of the hydrated chloride of aluminium, or chloralum, a useful agent, as while it arrests hæmorrhage, and checks suppuration, it acts also as a deodorizer in cases of a malignant or gangrenous character.

CHLORODYNE (*Dr. Ogden's*). Take of chloric ether 1

drachm, chloroform 6 drachms, tincture of capsicum half a drachm, oil of peppermint 2 drops, muriate of morphia 8 grains, perchloric acid 20 drops, tincture of Indian hemp 1 drachm, treacle 1 drachm, hydrocyanic acid (Scheele's) 12 drops; mix.

CHLORODYNE (*Squire's*). Take of chloroform 4 ounces, ether 1 ounce, rectified spirit of wine 4 ounces, treacle 4 ounces, extract of liquorice $2\frac{1}{2}$ ounces, muriate of morphia 8 grains, oil of peppermint 16 drops, simple syrup $17\frac{1}{2}$ ounces diluted hydrocyanic acid (2 per cent.) 2 ounces; mix.

CHLORODYNE (*Smith's*). Take of chloroform 4 fluid drachms, muriate of morphia 20 grains, ether (rectified) 2 fluid drachms, oil of peppermint 8 drops, diluted hydrocyanic acid 4 drachms, mixture of gum acacia 1 ounce, tincture of capsicum 6 drachms, treacle *ad* 4 ounces; mix.

CHLORODYNE, (*Chandler's American*). Take of the fluid extract of Indian hemp 30 drops, muriate of morphia 8 grains, oil of peppermint 10 drops, tincture of capsicum 15 drops, chloroform 2 drachms, alcohol (98 per cent.) 1 ounce, glycerine (pure) 1 ounce. Dose, ten to thirty drops.

CHLORODYNE (*Dr. T. S. Douse*). Extract of belladonna 2 drachms, muriate 30 grains, rectified ether 8 fluid drachms, chloroform 8 fluid drachms, dilute hydrocyanic acid 44 fluid drachms, oil of peppermint 30 drops, capsicine 6 grains, mixture of gum acacia 20 drachms, caramel 1 drachm, treacle 60 drachms.

CHLORODYNE, (*F. Stockman*). Chloroform 4 drachms, rectified spirit 2 drachms, muriate of morphia 8 grains, perchloric acid 10 drops, tincture of capsicum $\frac{1}{2}$ drachm, tincture of cannabis indicus 1 drachm, hydrocyanic acid (*Scheele's*) 12 drops, treacle 1 drachm.

CHOCOLATE, CHALYBEATE. Take of Spanish chocolate 16 ounces, carbonate of iron $\frac{1}{2}$ an ounce. Mix and divide into seventeen cakes. One a dose, in amenorrhœa and similar affections.

CHOCOLATE, PURGATIVE. Take of jalap 1 ounce, chocolate 9 ounces. Mix and divide into eighty cakes. Two a dose.

CHOCOLATE, VERMIFUGE. Take of scammony $\frac{1}{2}$ an ounce, chocolate 6 ounces. Mix and divide into twenty-four cakes. One a dose.

CHOLERA, HOMŒOPATHIC REMEDY FOR. Take of camphor 1 ounce, rectified spirit 6 ounces; dissolve the camphor in the spirit. Dose: two drops on a lump of sugar, repeated every quarter of an hour.

CHOLERA MIXTURE (*Board of Health*). Take of chalk mixture 1 ounce, aromatic confection 15 grains, tincture of opium 15 drops. [In premonitory diarrhœa.]

CHOLERA PILLS. Take of acetate of lead 1 drachm, opium 3 grains, conserve of roses a sufficiency to make a mass for 36 pills. Dose: 1 every hour.

CIGARETTES, BALSAMIC (FOR ASTHMA, &c). Soak strong unsized paper in a solution of saltpetre; this dry, and treat, first with tincture of cascarilla, and afterwards when nearly dry with compound tincture of benzoin; cut into squares of a suitable size, and roll into the form of cigarettes.

CIRCASSIAN CREAM. Olive oil 1 pint, white wax 2 ounces, spermaceti 2 ounces, alkanet $\frac{1}{2}$ oz.; perfume to taste.

CITRATE OF MAGNESIA (EFFERVESCENT). Take of citric acid (powdered) 4 pounds, calcined magnesia $1\frac{1}{2}$ pounds, bicarbonate of soda 3 pounds, tartaric acid 3 pounds, white sugar (powdered) 6 pounds, oil of lemons $1\frac{1}{2}$ ounces, rectified spirits, a sufficiency. Mix thoroughly the citric acid with the sugar; add the soda, magnesia, and tartaric acid; pass the whole through a sieve to facilitate their mixture; moisten with the spirit; pass through a coarser sieve, and place the whole on a wooden tray to dry in a warm place for four-and-twenty hours, or till the salt is quite dry; add the oil of lemons, and bottle instantly.

CODEIA, CODEINE. This alkaloid, the discovery of *Robiquet*, may be procured by making a solution of hydrochlorate of morphine in water, and precipitating the morphine therefrom by the addition of ammonia. The codeine remaining in solution may be obtained in crystals by careful poration.

CODLIVER-OIL CREAM. Make a mucilage of 1 ounce of picked gum tragacanth, with 16 ounces of cold water, stirring occasionally for 24 hours; to this add equal parts by measure of codliver oil, shake well together, and add 4 ounces of rectified spirits, $\frac{1}{2}$ drachm of oil of lemons, and $\frac{1}{2}$ drachm of essential oil of almonds.

COLCHICUM HONEY. Sec HONEY.

COLLODION, MORPHIA (FOR NEURALGIA). To three parts of collodion add one part of hydrochloric of morphia. Apply with a camel hair pencil. [To be used with caution.]

COLLODION (HÆMOSTATIC). Take of collodion (official) 100 parts, phenic acid 10 parts, tannic acid and benzoic acid of each 5 parts; mix by shaking.

COLLODION (*Dr. Maynard's*). Take of sulphuric ether (sp. gr. 1.850) 2 parts, nitric acid (sp. gr. 1.450) 1 part; mix and allow the temperature to fall to about 100 deg. Fahr.; add raw cotton to point of saturation; let it soak about two hours; pour off the acid and wash the cotton till the application of litmus proves the absence of acidity; dry thoroughly. The cotton will now be found to be converted into a gum completely soluble in ether of about .750 sp. gr.

COLOURS FOR CONFECTIONERY.—BLUE: A hot aqueous solution of indigo is generally used for this colour. It must be used fresh as made. RED: Take of cochineal 2 ounces, bitartarate of potass 1 ounce, alum in powder 1 ounce; boil for ten minutes, add 4 ounces of sugar, and when settled decant the clear portion. GREEN: Boil picked spinach leaves in water, and strain off the clear portion for use. YELLOW: An aqueous solution of gamboge.

COLOURS FOR SHOW CARBOYS. AMBER: Dragon's blood in coarse powder 1 part, oil of vitriol 4 parts; when thoroughly dissolved, dilute with cold distilled water till the required tint is obtained. LILAC: Dissolve oxide of cobalt in hydrochloric acid, adding sesquicarbonate of ammonia in excess, and afterwards sufficient ammonia-sulphate of copper to bring the required colour. ORANGE: Dissolve bichromate of potash in water and add a little sulphuric acid. VIOLET: Mix together solutions of nitrate of cobalt and sesquicarbonate of ammonia, adding a sufficiency of ammonia-sulphate of copper to strike the required colour. BLUE: Take of liquor of perchloride of iron 10 drops, yellow prussiate of potash 10 grains, oxalic acid 2 drachms, water 1 gallon. RED: Liquor of perchloride of iron 10 drops, sulphocyanide of potash 10 grains, water 1 gallon. CRIMSON: Iodine and iodide of potash of each 30 grains, hydrochloric acid 1 drachm, water 1 gallon. GREEN: Sulphate of copper 1 drachm, bichromate of potash 30 grains, strong liquor of ammonia 2 ounces, water 1 gallon.

CONINE (*Giegger*). On distilling the alcoholic extract of hemlock seeds in water, conine passes over and floats on the top of the distillate. It may be collected and purified in the usual way in which the volatile bases are treated.

CONSERVE, ANTISCORBUTIC. Take of horse-radish, watercress, and water-trefoil, orange juice and radish juice of each equal parts; powdered white sugar sufficient to make a conserve.

CONSERVE OF SLOES. Mix the pulp of the fruit with brown sugar in the proportion of 1 part fruit to 3 parts sugar.

CONSERVE OF VIOLETS (*Soubeiran*). Violet flowers 1 part, sugar 3 parts; beat to a paste.

COPAIBA, MISCIBLE. Pure balsam of copaiba 2 parts, strong liquor of potassa 1 part. Mix.

COPAIBA, SOLUBLE. Pure balsam of copaiba and liquor of potash of each equal parts, boil together for a few minutes; let it stand for a few days and carefully draw off the clear portion, rejecting the first few drops.

CORN PLASTERS, MECHANICAL. These are usually made by spreading adhesive plaster on buck skin, amadou, or sometimes vulcanised rubber, and cutting out the plasters with punches of the requisite shape.

CORN SOLVENT. Sir H. Davy's Corn Solvent is composed of 1 part of salt of sorrel and 2 parts of caustic potash, mixed and reduced to a fine powder; a small quantity of which is placed on the corn at intervals of four-and-twenty hours.

COUGH BALSAM, "INFALLIBLE." Chlorodyne (*Squire's*) 1 ounce, syrups of tolu and squills 4 ounces, warm water 20 ounces, containing in solution tartrate of antimony 10 grains. Dose 1 to 2 drachms.

CREME DE CATHEY. White wax 2 drachms, spermaceti 2 drachms, almond oil 4 ounces, balsam of tolu 2 drachms, rose water 1 ounce; stir till cool.

CREME DE PISTACHE. Pistachc nuts 3 ounces, olive oil 1 ounce, palm soap 1 ounce, white wax 1 ounce, spermaceti 1 ounce, orange flower water 3½ pints, oil of neroli 2 drachms; proceed as for milk of roses.

CREME D'ALMANDE. Take of purified lard 7 pounds,

potash ley (containing 26 per cent of caustic potash) 3 pounds 12 ounces, rectified spirit 3 ounces, essential oil of almonds 2 drachms. Melt the lard in a porcelain vessel by means of steam heat, run in the ley very slowly, stirring the while. When about half the ley is run in the *crème* will become too thick for stirring; it must now be transferred to a mortar and brisk trituration kept up till it assumes a pearly appearance, the alcohol (with the essential oil in solution) being added during this last stage of the process.

CROTON LINIMENT. See HAIR STIMULANTS.

CRYSTALLIZED CREAM. Almond oil 10 ounces, spermaceti $1\frac{1}{2}$ ounce, melt with a gentle heat, and add oil of neroli 15 drops, oil of lavender 10 drops, oil of rosemary 10 drops.

CURRY, INDIAN. Take of coriander seeds powdered 3 ounces, black pepper 5 ounces, fenugreek seeds 3 ounces, cummin seeds 3 ounces, turmeric root 6 ounces, cayenne pepper 1 drachm.

CYTISINE. This is the name given by Husemann and Mambre to the poisonous alkaloid discovered by them in the seeds of the bladder senna (*Cytisine laburnum*). The process for its preparation is as follows: Macerate the pounded seeds for some time in cold water, acidify with sulphuric acid, decant the liquor, press the residue and nearly neutralise the solution with a weak alkali such as chalk, and again decant, precipitate the decanted liquor with acetate of lead, carefully removing any excess of lead from the solution by means of sulphurated hydrogen, neutralise with soda, precipitate with gallic acid, keeping the liquid neutral; the precipitate must now be collected and triturated with finely divided litharge and water to a paste; dry by the aid of heat, make an extract with alcohol, concentrating the extract to the consistence of a syrup; make strongly acid by addition of nitric acid, add 6 or 8 times the volume of absolute alcohol, bring up to boiling point and cool gradually; pour off the liquid from the resinous mass and set aside, when crystals of nitrate of cytisine will present themselves. The base is procured from this salt by heating it with a caustic potash solution, when it separates as an oil, which solidifies on cooling.

D

DECOCTION OF ARNICA.—Arnica root 2 drachms, water 9 ounces; boil down to 6 ounces and strain. Dose, 1 ounce, in rheumatism, &c.

DECOCTION OF BLUE CARDINAL FLOWERS (*Swediana*). Take of the dried root of *Lobelia syphilitica* 5 ounces, water 12 pounds; boil and evaporate to 7 pounds, strain.

DECOCTION OF HOREHOUND. Take of Siberian horehound $1\frac{1}{2}$ ounces, water 1 quart; boil down to 1 pint. Dose $\frac{1}{2}$ pint.

DECOCTION OF IRISH MOSS (*Pereira*). Macerate 1 ounce of Carrageen moss for ten minutes in luke-warm water; take it out and drain it, and afterwards boil in three pints of milk for fifteen minutes, and strain.

DECOCTION OF PELLITORY. Take of pellitory-root 1 ounce, water 30 ounces; boil and evaporate to 20 ounces; strain.

DECOCTION OF SARSAPARILLA, COMPOUND CONCENTRATED. Take of best Jamaica sarsaparilla 6 pounds, mezereon root 9 pounds, liquorice, bruised, 16 pounds. Lay the last two on the bottom of a clean copper, and then the sarsaparilla loosely on to above, all interlacing one another at right angles; cover with a board on which one or two heavy iron weights are placed; water is now poured on to a depth of ten inches above the board, and the whole brought up to boiling point; when boiling point is reached allow the decoction to stand for four hours, and again bring up to boiling point for an hour, adding from time to time fresh water; the decoction is now run off and set to evaporate, the ingredients being treated with a shower of boiling water till exhausted. The whole is now rapidly evaporated down to about 8 gallons, to which is added 2 drachms of oil of sassifras dissolved in 2 gallons of rectified spirit and 1 pint of essence of guaiacum. A week's repose will render this clear, brilliant, and fit for sale.

DECOCTION OF WORM SEED (*Dr. Griffith*). Take of leaves of worm seed (*Chenopodium anthelminticum*) 1 ounce,

water 1 pint, orange peel 2 drachms; boil 10 minutes and strain. Dose a wineglassful.

DELPHININE (*Parrish*). Make an alcoholic extract of the seeds of stavesacre (*Delphinium staphysagria*); this treat with dilute sulphuric acid, precipitate with potassa; again dissolve in dilute sulphuric acid; the colouring matter may now be precipitated by nitric acid, and afterwards the alkaloid by potassa; it is now to be dissolved in alcohol and deposited by evaporation. Dose $\frac{1}{4}$ to 1-12 of a grain.

DEPILATORIES. FRENCH DEPILATORY: Quicklime 1 ounce, carbonate of soda 2 ounces, lard 8 ounces; to be applied as an ointment when fresh made. **BOUDET'S DEPILATORY:** Hydrosulphate of soda $6\frac{1}{2}$ ounces, quicklime 5 ounces, starch 5 ounces. **POUDRE SUBTILE:** Sulphuret of arsenic $\frac{1}{2}$ an ounce, quicklime 5 ounces, starch 7 ounces. When required for use, make into a thick paste with warm water, spread on a piece of paper, and apply as a plaster for 10 minutes, washing off with warm water; applying afterwards a dressing of cold cream. **REDWOOD'S DEPILATORY:** The safest and best is a strong solution of sulphuret of barium made into a paste with powdered starch, and applied at once.

DETERGENT (*Dr. Collier*). Take of liquor of potassa 2 fluid drachms, rose water $5\frac{1}{2}$ fluid ounces, spirit of rosemary 1 fluid ounce; mix. [To free the head from scurf &c.]

DEVELOPING SOLUTION, PHOTOGRAPHIC. Place 120 grains of gelatine in a thin beaker glass, add an ounce each of water and sulphuric acid, previously mixed and cooled; when all the gelatine is dissolved the solution is to be poured into about 5 times its bulk of water, and rendered slightly alkaline with ammonia; the resulting light brown solution is now made up with 500 grains of proto-sulphate of iron.

DEXTERINE. Starch gum may be prepared by the following method:—Soak 1000 parts of potato starch in 300 parts of water, acidulated with 2 parts of nitric acid; the starch mixture is left to dry, and when dry is to be heated for a few hours in a stove at a temperature of 212° Fahr.

DIGITALINE, CRYSTALLIZED. Take 100 parts (by weight) of digitalis in coarse powder, mix this with a solution of 25

parts of acetate of lead in 100 parts of water, set aside for 12 hours, and after this is exhausted with water the residue is treated with alcohol of 50 deg. until the solution is free from any taste. The solution thus obtained is treated with an aqueous solution of 4 parts of acetate of lead, and filtered. To this solution is next added a solution of 2 parts of phosphate of soda, again filtered, and the alcohol removed by distillation on a water bath. The residue of the preceding process is evaporated to about 10 parts, filtered, the precipitate washed with cold water, placed between folds of blotting paper to remove the water, and dissolved in twice its weight of alcohol of 60 per cent. On being allowed to stand, two different kinds of crystals present themselves: first crystals of an inactive substance, and after several days, fine yellow crystals of digitaline; when these are fully formed the mother liquor is poured off and the crystal taken up with alcohol of 80 per cent., and some animal charcoal added; the solution is filtered and left to evaporate and treated with pure chloroform, which takes up only the digitaline alone; this may be further purified with alcohol and animal charcoal.

DISINFECTING POWDER (*Collins*). Take of dessicated chloride of lime 2 parts, burnt alum 1 part.

DISINFECTING FLUID (*Condy*). Condy's disinfecting fluids have for their basis the alkaline permanganates.

DISINFECTING FLUID (*Ledoyen*). Take of nitrate of lead 1 part, water 8 parts: solve

DRAUGHT, ANODYNE (*Copland*). Take of nitre 6 grains, tincture of opium 12 drops, compound spirit of ether 1 drachm, syrup of poppies 2 drachms, camphor mixture 9 drachms.

DRAUGHT, ANTI-NEURALGIC (*Jeston*). Take of narcotine 2 grains, dilute sulphuric acid 20 drops, infusion of roses 12 drachms.

DRAUGHT, ANTISPASMODIC (*Dr. Gregory*). Take of spirit of ammonia (fetid) 1 drachm, camphor mixture 10 drachms, syrup of saffron 1 drachm.

DRAUGHT (*Donovan*). Take of liquor of hydroiodate of arsenic and mercury (*Donovan's*) 2 drachms, distilled water 3½ ounces, syrup of ginger ½ ounce, mix for 4 doses.

DRAUGHT, EMETIC (*Copland*). Take of ipecacuanha

30 grains, sesqui-carbonate of ammonia 20 grains, tincture of capsicum 30 drops, oil of camomile 10 drops, mint-water 2 ounces. Invaluable in cases of narcotic poisoning.

DRAUGHT VERMIFUGE. Take of castor oil 4 drachms, spirit of turpentine 2 drachms, mint water two ounces, syrup 1 ounce, powdered gum 2 drachms.

DROPS PECTORAL (*Bateman's*). Take of compound tincture of camphor 10 ounces, tincture of castor oil 4 ounces, tincture of opium 1 ounce, oil of aniseed 15 drops; may be coloured with cochineal.

DROPS, ORIGINAL BLACK (*Toussaint*). Dr. Armstrong gives the following as the original form of this much prized remedy:—Take of opium sliced $\frac{1}{2}$ pound, good verjuice 3 pints, nutmegs $3\frac{1}{2}$ ounces, saffron $\frac{1}{2}$ ounce, boil to a proper thickness; then add sugar 4 ounces, yeast 2 teaspoonsful; set in a warm place for 6 or 8 weeks, and afterwards place it in the open air till it assumes the consistence of a syrup; decant, filter, and bottle up; adding a little sugar to each bottle.

DROPS, GOLDEN (*De La Motte*). Take of chloride of iron 3 ounces, alcohol 7 ounces; expose the mixture in a closely-stoppered bottle to the rays of the sun until it becomes discoloured.

DROPS, JESUITS. Take of copaiba 6 ounces, gum guaiacum 1 ounce, chio turpentine and salt of tartar of each $\frac{1}{2}$ ounce, cochineal 1 drachm, alcohol 1 quart; digest a week and filter.

DROPS, ODONTALGIC (*Copland*). Take of powdered opium and camphor, of each 20 grains, oils of cajeput and clove, of each 2 drachms, alcohol and sulphuric ether of each 4 drachms.

DROPS, ANTI-RHEUMATIC. Take of bisulphuret of carbon 1 drachm, alcohol 2 drachms. Dose, 6 drops.

DROPS, SCOURING. Take of spirit of turpentine and oil of lemon equal parts. [To remove oil stains, grease spots, &c., from silk and other fabrics.]

E

EAU DE RABEL (*Paris Codex*). Take of pure sulphuric acid 25 parts, rectified spirit 75 parts, petals of red poppy 1 part; add the acid by degrees to the spirit, carefully stirring. When cold add the petals and macerate for four days.

EAU DE EGYPT. See HAIR DYES.

EAU DE MEL. See HONEY WATER.

EAU DE COLOGNE (*Farina*). Take of alcohol, pure, 1 gallon, oil of bergamot 9 drachms, oil of Portugal 9 drachms, oil of neroli 10 drachms, oil of pectigrain 10 drachms, oil of lemon 8 drachms, oil of lavender 8 drachms, rosemary 8 drachms, rose water 2 ounces, jasmine water 2 ounces, orange flower water 2 ounces; digest for fourteen days and distil. [The best of all the many published formulæ.]

EAU DE CARMES (EAU DE MELISSA, SPIRIT OF BALM.) Fresh-flowering balm $1\frac{1}{2}$ pounds, rind of lemon, cut fine, 4 ounces, cinnamon, bruised, 2 ounces, cloves 2 ounces, nutmegs 2 ounces, coriander seeds 1 ounce, angelica root 1 ounce, rectified spirit 1 gallon; digest in a close vessel for fourteen days, and distil.

EAU DE HONGRIE. See HUNGARY WATER.

EGGS, TO PRESERVE. Quicklime and salt of each 1 pound, saltpetre 3 ounces, water 1 gallon.

ELAIDIC ACID (*Meyer*). Pass a stream of nitrous acid gas through pure oleic acid at a low temperature for several minutes; the crystalline mass which now forms is to be washed in hot water and dissolved in an equal volume of hot alcohol. Crystals of elaidic acid deposit themselves as the liquor cools; these may be purified in the usual way by repeated crystallisation.

ELATERINE. Digest elaterium in hot alcohol, filter, and evaporate to the consistency of a syrup; treat this with boiling distilled water, allow this to cool; collect the precipitate, and purify by repeated re-solution and precipitation as before.

ELECTUARY OF COPAIBA (*Ricord*). Take of copaiba and powdered cubebs equal parts, conserve of roses and orange peel a sufficiency to make a paste.

ELECTUARY OF COWHAGE. Take of cowhage 40 grains, syrup $\frac{1}{2}$ ounce.

ELECTUARY OF MALE FERN (*Radius*). Take of extract of male fern 3 drachms, conserve of roses 1 ounce. Dose $\frac{1}{2}$ ounce night and morning.

ELECTUARY FOR WORMS. Take of worm-seed 5 grains, sulphate of iron 2 grains, honey and jalap of each 10 grains. Sufficient for one dose.

ELIXIR OF ALOES (*Copland*). Take of acetate of potass, oxgall, socotrine, aloes, and myrrh of each 1 drachm, hay saffron 30 grains, proof spirit 10 drachms; digest a week and strain. Dose a teaspoonful.

ELIXIR, COUGH (*Cadet*). Take of powdered ipecacuanha and balsam of tolu of each 4 drachms, flowers of benzoin, opium, and saffron of each 2 drachms, oil of aniseed 1 drachm, camphor 40 grains, rectified spirit 30 ounces; digest a week and filter. Dose 1 drachm.

ELIXIR OF GARUS (*Soubeiran*). Take of socotrine aloes, and saffron 1 ounce, rectified spirit 20 pounds, myrrh, cannella alba, cloves, and nutmegs of each $\frac{1}{2}$ ounce, orange flower water 16 ounces; macerate forty-eight hours, distil over 10 pounds, and add syrup $12\frac{1}{2}$ pounds, orange flower water 8 ounces. May be coloured with saffron.

ELIXIR OF ROSES. Take of cinnamon 3 ounces, ginger 2 ounces, cloves 1 drachm, essence of peppermint 1 ounce, oil of orange peel 1 drachm, otto of roses 15 drops, rectified spirit 50 ounces; digest for fourteen days and filter. An excellent and agreeable mouth and tooth wash.

EMBROCATION, ROCHE'S. Take of olive oil 1 ounce, oil of cloves and amber of each $\frac{1}{2}$ ounce. [In hooping cough.]

EMERALDINE. See ANILINE GREEN.

EMETINE (*Paris Codex*). Dissolve 1 ounce of alcoholic extract of ipecacuanha in 10 ounces of water; filter, and add 1 ounce of calcined magnesia; evaporate to dryness and wash in 5 ounces of very cold water; again dry, and dissolve in boiling alcohol; evaporate the filtered tincture to dryness, re-dissolve in water, acidulate slightly with dilute sulphuric acid, discharge the colour by means of animal charcoal, filter; precipitate now with liquor of ammonia, and finally dry the precipitate with a gentle heat. Emetic dose one-sixteenth of a grain.

EMETINE. Digest powdered ipecacuanha in ether at a temperature of 60°; decant and distil; this process is to be repeated till the ether comes off the ipecacuanha pure; now treat the marc in the same way with alcohol, evaporate to dryness, and dissolve the residue in cold water; add magnesia to separate the gallic acid; filter, evaporate, again dissolve in alcohol, filter and evaporate. Emetic dose $\frac{1}{4}$ grain.

EMULSION OF COAL TAR (*Lebœuf*). This is made by means of a tincture of Panama bark (*Quillaya saponaria*), which is prepared by digesting 1 part of finely crushed bark in 4 parts of alcohol (95°) on a sand bath, filtering at the end of forty-eight hours. 12 parts of the tincture is now digested with 10 parts of coal tar. An emulsion is obtained of a fine appearance and stable character.

EMULSION OF WOOD TAR (*Jeannet*). Take of powdered crystals of carbonate of soda 1 part, wood tar 1 part, water 100 parts; mix well the soda and tar in a wedgwood mortar, add them to the water in a large flask, agitate for ten minutes and filter.

ERGOTINE. Exhaust powdered ergot with cold water in a percolator, heat the aqueous extract to 200° Fahr, and filter; evaporate to the consistence of syrup, and when cold treat with alcohol in excess; this will precipitate the gum; after standing the clear portion is to be decanted, and brought by the heat of a water bath to the thickness of an extract.

ESSENCE OF ACONITE. Take of the herb aconite, dried and reduced to a powder, 4 ounces, alcohol 8 ounces; macerate for four days, press and filter; a quantity of spirit sufficient to make the final result equal 8 ounces is now poured on the pressed marc, and after standing for a week is strained off as before.

ESSENCE, ANODYNE. Take of extract of henbane 5 drachms, rectified spirit 2 fluid ounces; digest for fourteen days, and filter. Dose 10 drops.

ESSENCE OF APPLES, ARTIFICIAL. Take of valcrianate of oxide of amyle (q.v.) 1 ounce, rectified spirit 9 ounces; agitate until the ingredients are thoroughly amalgamated.

ESSENCE OF ARNICA. Proceed with arnica flowers as for Essence of Aconite.

ESSENCE OF CAYENNE. Take of cayenne 2 ounces, proof spirit 1 pint; digest fourteen days, strain and filter.

ESSENCE OF CELERY. Take of seed of celery (*Apium graveolens*) bruised 7 ounces, rectified spirit 20 ounces; digest and filter.

ESSENCE OF COGNAC. Brandy oil (Oxide of Amyle) 1 ounce, rectified spirit 9 ounces.

ESSENCE OF CUBEBS (*Cooley*). Cubebs ground 82 ounces, rectified spirit 1 gallon; digest fourteen days, press and filter. Dose 1 drachm.

ESSENCE OF ERGOT, ETHEREAL. Take of ground ergot 4 ounces, sulphuric ether 8 ounces; digest seven days, strain and filter; distil over slowly the ether from a glass retort into a cool receiver, reducing the temperature towards the close of the operation; recover the residuum, and dissolve when cold in 2 ounces of ether.

ESSENCE OF JARGONELLE PEAR. Take of acetate of oxide of amyle (q: v:) 1 ounce, rectified spirit 9 ounces; amalgamate.

ESSENTIA ODORATA. Take of oil of lavender 90 drops, oil of cloves 45 drops, oil of cassia 30 drops, oil of bergamot 30 drops, oil of neroli 20 drops, rectified spirit 2 drachms, essence royale 10 ounces.

ESSENCE OF PINE APPLE. Take of butric ether 1 ounce, rectified spirit 9 ounces.

ESSENCE OF RHUBARB (SWEET). Take of rhubarb in moderately fine powder 16 ounces, sugar in coarse powder 8 ounces, alcohol 1 pint. Moisten the rhubarb in 4 ounces of the alcohol, introduce it into a conical percolator, and press gently; pour upon it the remainder of the alcohol, pass through in addition sufficient spirit to displace 1 pint of tincture; set this aside in a warm place till reduced by spontaneous evaporation to 6 ounces; continue the percolation with proof spirit till 2 pints more of tincture is obtained from the marc; evaporate this by gentle heat to 6 ounces, then add the sugar; when this is dissolved add also the reserved tincture; evaporate gently to the measure of a pint.

ESSENCE ROYALE. Take of ambergris 80 grains, musk 40 grains, civet 20 grains, oil of cinnamon 12 drops, oil of rhodium 8 drops, otto of roses 8 drops, rectified spirit 8

ounces. On the Continent this preparation has a high reputation as an anti-spasmodic.

ESSENCE OF SANTAL. Take of oil of yellow sandal wood 1 part, rectified spirit 3 parts, oil of cassia a sufficiency. Dose 60 drops in gonorrhœa, &c.

ESSENCE OF SOAP. Dissolve 1 ounce of Castile soap in 5 ounces of rectified spirit, and perfume to taste.

ESSENCE OF VANILLA. Vanilla 1 ounce, rectified spirit 10 ounces; digest for fourteen days and strain.

ESSENCE, VOLATILE (*Redwood*). Take of oil of bergamot 3 ounces, essence of lemon 2 ounces, oil of lavender 6 drachms, essence of jasmine 4 drachms, oil of sassafras 3 drachms, oil of neroli 2 drachms, otto of roses 90 drops, oil of origanum and essence of ambergris of each 1 drachm, musk 20 grains; macerate for a week, and decant the clear portion, add the strongest liquor of ammonia in the proportion of 12 drachms to 20 ounces.

ESSENCE, WESTPHALIAN. CAMBRIAN ESSENCE. To 1 pint of acetic acid add 5 drachms of pure creosote. This essence, which is sometimes sold under the name of "Essence of Smoke," is used to give a smoky flavour to cured meats, &c.

ETHER, BENZOIC (*Liebig*). Take of alcohol (of the specific gravity of .830) 16 ounces by weight, benzoic acid in crystals 8 ounces, concentrated hydrochloric acid 4 ounces by weight; these are distilled together, and as soon as the product turns milky when mixed with water, a fresh receiver is attached to the retort, and the distillate collected; to this water is to be added, and the supernatant ether decanted and boiled with water in which is a little oxide of lead; it is finally freed from water by means of chloride of calcium.

EXTRACT OF ANGELICA (*Dr. Moir*). Take of angelica root 2 pounds, rectified spirits 1 gallon; digest for fourteen days, and filter; pour 1 gallon of proof spirit over the marc, and repeat the digestion and filter; mix, and distil off the spirit, evaporate the extract. Dose 10 grains.

EXTRACT OF CALABAR BEAN. PHYSOSTIGM. Reduce the bean to a moderately fine powder, and macerate in alcohol (sp. gr. .838) for ten days; then transfer the powder to a percolator, and pass through alcohol till the percolate becomes colourless. Mix the tincture obtained by maceration with that obtained by percolation; distil off the alcohol, and evaporate the

residue over a water bath to the proper consistency. If properly worked the yield will be about 2 per cent.

EXTRACT (FLUID) OF ERGOT OF RYE (*Long*). Digest freshly powdered ergot of rye in glycerine for 10 days, strain off the fluid: the residue must now be digested in spirit for 10 days and filtered; reduce by distilling off the spirit to the consistency of syrup and add to the previous solution. Dose 1 drachm.

EXTRACT OF MEAT (*Liebig*). The flesh, freed from fat and tendons, is hacked or minced in a mill; when cut sufficiently small it is placed in a digester with its own weight of water, and by steam heat it is very carefully and gradually brought to a temperature of 158° Fahr. The application of the heat ought to be so graduated as to attain its maximum at the end of four hours. The fluid extract is now freed from any remaining fat by being placed in deep narrow vessels and carefully skimmed. The quality of the extract depends on the complete removal of fat. The fluid extract is now filtered and evaporated in open pans of iron (other metals are ineligible); steam heat must be used in this operation. When a proper consistency is obtained the extract is packed in air-tight earthenware jars.

F

FERRATE OF POTASH. Expose to a full red heat a mixture of finely powdered oxide of iron with four times its weight of dry nitre. The resulting blackish green mass is ferrate of potash.

FERRIC ACID. Expose a mixture of pure sesquioxide of iron and nitre in the proportion of 1 part of the former to 4 of the latter (both in the form of dry powder), to a full red heat for an hour in a covered crucible, and treat the mass as soon as cold with cold water.

FLY POWDERS. These somewhat dangerous articles are prepared from the black oxide of arsenic, and in many cases from the common white arsenic of commerce. A much more simple agent for the destruction of flies may be manufactured from the concentrated extract of quassia wood. See **FLY POISON**.

FRENCH POLISH. Dr. Ure, in his "Dictionary of Arts and Manufactures," gives the following excellent formula:—

Take of shellac 12 ounces, gum elemi 2 ounces, gum copal 3 ounces, spirits of wine 1 gallon; dissolve.

FRENCH PURPLE. This is one of the most beautiful colouring agents which chemistry has taught us to extract from the lichens. It is prepared in the following manner:— Extract from the lichens their lecanoric, erythic, and evernic acids, by digestion with ammonia, press the mass; precipitate the solution by means of a mineral acid, collect and wash the precipitate, which redissolve in ammonia with the aid of heat; the solution obtained, on exposure to the air at the temperature of 36° F. takes a bright red colour; when the liquid has assumed the required tint, it must be poured into shallow vessels and very slowly evaporated at about 90° F., care being taken not to raise the temperature too high; the colour now changes to a deep violet. Saturate the solution with a strong acid, and collect the precipitate in a filter; this precipitate, after careful washing, is French Purple.

FUCUS WINE. Take of grapes 98 pounds, distilled water 16½ gallons, white sugar 84 pounds, bitartrate of potash 16½ ounces, dried fucus (*Fucus vesiculosus*) 23 pounds 9 ounces. Crush the grapes and pack them in a cask, with alternate layers of fucus. Dissolve the sugar and bitartrate of potash in the water, and pour the solution upon the fucus and grapes. Keep in a warm place and, if necessary, add a little yeast to promote fermentation.

FIXATAURE. See BANDOLINE.

FLORIDA WATER. Take of oil of lavender, oil of bergamot, and oil of lemons, of each 2 drachms, tincture of turmeric and oil of neroli of each 1 drachm, oil of melissa 30 drops, oil of roses 10 drops, alcohol 2 pints.

FLUID CAMPHOR. Camphor in powder 1 drachm, freshly precipitated carbonate of magnesia 2 drachms, distilled water 1 pint; solution is effected by means of a stream of carbonic acid gas under pressure.

FLUID MAGNESIA. Prepared in a manner similar to the above; if properly prepared, fluid magnesia usually contains about 12 grains of carbonate to the ounce.

FLY POISON. Black pepper 1 teaspoonful, brown sugar 2 teaspoonfuls, cream 4 teaspoonfuls.

FORMIC ACID (*Lichig*). Dry formate of lead 18 parts,

oil of vitriol 6 parts, water 1 part; distil in a chloride of calcium bath.

FRANGIPANI, ESSENCE OF. Of the many formula given for the preparation of this fine bouquet the following Parisian one is among the most popular:—Take of rectified spirit 1 pint, spirit of jasmine 8 ounces, spirit of roses 1 ounce, spirit of cassia 1 ounce, essence of bergamot $3\frac{1}{2}$ drachms, essence of vanilla $3\frac{1}{2}$ drachms, tincture of tolu 2 drachms, tincture of musk $1\frac{1}{2}$ drachms.

FRENCH POLISH. Take of pale shell lac $2\frac{1}{4}$ pounds, mastic and sandaric of each 3 ounces, spirits 1 gallon; dissolve and add copal varnish 1 pint, mix well by agitation. Another receipt:—Take of shell lac 12 ounces, wood naphtha 1 quart; dissolve, and add $\frac{1}{2}$ pint of linseed oil.

FULIGOKALI. Take of caustic potash 1 part, and dissolve in a sufficiency of water, add wood soot 5 parts, boil one hour; dilute with water and filter; evaporate to dryness and bottle off. Dose, two to three grains. [Given at the Paris hospitals in skin diseases.]

FUMIGATING PASTILES. See PASTILES.

FURNITURE CREAM. Yellow wax 4 ounces, yellow soap 2 ounces, water 50 ounces; boil, with constant stirring, and add boiled oil and oil of turpentine of each 5 ounces.

FURNITURE OIL. Boiled linseed oil 1 pint, yellow wax 4 ounces; melt together and colour with alkanet root.

FURNITURE PASTE. Digest 2 drachms of alkanet root in 20 ounces of turpentine till the colour is imparted; add of yellow wax in shavings 4 ounces; place on a water bath and stir till the admixture is complete.

FURNITURE REVIVER. Pale linseed oil, raw, 10 ounces, lac varnish and wood spirit of each 5 ounces. Mix well before using.

G

GELATINE CAPSULES FOR BOTTLES. Take of gelatine 1 pound, glycerine $1\frac{1}{2}$ ounces; mix by the aid of heat, add colour to taste; cut the cork flush with the bottle, the neck of which is to be dipped into the melted solution. Trade-mark labels, &c., can be well preserved; by this simple process.

GENTIANINE. Digest gentian root coarsely powdered in ether for forty-eight hours; filter, and evaporate to the consistence of an extract; add alcohol till it is no longer coloured; evaporate, re-dissolve in proof spirit, filter and evaporate; dissolve in water, filter, and add magnesia; boil and filter; dissolve the sediment in ether, and evaporate to dryness. Dose 1 to 2 grains.

GIN, CORDIAL. Take of strong gin 90 gallons, oil of almonds 1 drachm, oils of cassia, nutmeg, and lemon of each 2 drachms, oils of juniper, caraway, and coriander of each 3 drachms, essence of orris root and cardamoms of each 5 fluid ounces, orange flower water 3 pints, white sugar 56 pounds, dissolved in 4 gallons of water; dissolve the essences in $\frac{1}{2}$ gallon of rectified spirit, and add gradually to the gin, until the requisite flavour is produced; next the dissolved sugar, and afterwards 4 ounces of alum dissolved in a sufficiency of water to make the whole quantity up to 100 gallons; now add 4 ounces of salt of tartar dissolved in $\frac{1}{2}$ gallon of water; shake well up, and set aside for a week, when it will be fit for use.

GINGER BEER. Take of strong ginger bruised 12 ounces, tartaric acid 3 ounces, white sugar 8 pounds, gum arabic 8 ounces, essence of lemon 2 drachms, water nine gallons; boil the ginger for an hour, strain the liquor, add the tartaric acid and sugar and again boil; the gum arabic must be dissolved in a separate portion of water to which the essence of lemons may be added; mix, and cool down to 100 deg. Fahr: add some fresh yeast, and allow to ferment; finally bottle off for use.

GINGER BEER POWDERS. Take of best lump sugar in fine powder 5 ounces, tartaric acid $1\frac{1}{2}$ ounce, carbonate of soda $1\frac{1}{2}$ ounce, strong ginger in fine powder 2 drachms, essence of lemon 10 drops; the materials (thoroughly dry) are to be mixed in a warm mortar and preserved in a tightly-stoppered bottle.

GLUCOSE. Take of barley malt 10 pounds; stir well in 100 pounds of water, to this add 100 pounds of starch; keep the whole at the temperature of 150° Fahr. for several hours, with constant stirring; great care must be observed to keep the temperature uniform. After agitating in this way for six hours, filter, clarify, and evaporate to a syrup. As Glucose procured in this way cannot be divested of a malty flavour, the range of its application is limited. *Maubre* has devised a process the product from which is perfectly pure and free from any bitterness. "A mixture of dilute sulphuric acid and starch is boiled under the pressure of 6 atmospheres, in boilers capable of sustaining this strain; these boilers are lined with lead, and have in the centre a perforated lead tube to carry off the steam, together with safety-valves and thermometers; 56 pounds of sulphuric acid are diluted with 560 pounds of water, and heated to 212° Fahr.; a second mixture of the same amount of acid and water is made in a separate wooden vessel, and brought to a temperature of 86° Fahr.; into the second mixture 2,240 pounds of starch meal are well stirred, and heated to 100° Fahr.; this is now carefully and by degrees added to the first mixture in the boiler, and after stirring for a few minutes at 212° Fahr. the stopcocks are closed, and the heat raised to 320° Fahr. and continued till all the starch is converted into sugar (from two to four hours); the contents of the boiler are now run into a tank of wood, and 156 pounds of carbonate of lime (previously mixed with 500 pounds of water) is gradually added; the whole is now filtered, and the filtrate evaporated to 20° B., and clarified by means of blood and bone black, and again filtered; the result is a perfectly pure Glucose."

GLUCIC ACID (Cooley). Saturate a solution of grape sugar with lime or baryta, and set aside; after some weeks precipitate the solution with basic acetate of lead, filter, wash the precipitate in water, diffuse it in fresh water, decompose by sulphurated hydrogen, and evaporate the filtered liquor.

GLUE, ELASTIC. Dissolve glue by the aid of a water bath, evaporate this till a thick fluid is obtained, add to this an equal weight of pure glycerine, continue the evaporation with stirring until the remaining water is driven off; run it out on a marble slab to cool. [This composition might be advantageously applied to the manufacture of printers' rollers, &c.]

GLUE, LIQUID (*Dumoulin's*). Take of soft water 1 quart, best pale glue 2 pounds; dissolve in a covered vessel by the aid of the heat of a water bath; after cooling add with caution 7 ounces of nitric acid (sp: gr: 1.335); when cold bottle off.

GLUE, MARINE, EXTRA FINE. Caoutchouc 20 grains, chloroform 2 fluid ounces; dissolve and add 4 drachms of powdered mastic; must be kept cool and well corked.

GLUE, PORTABLE, MOUTH GLUE. Take of fine pale glue 1 pound, dissolve over a water bath in a sufficiency of water, add brown sugar $\frac{1}{4}$ pound, continue the heat till amalgamation is effected; pour on a slab of slate or marble, and when cold cut into squares.

GLOVE POWDER. Take of Castille soap any quantity; thoroughly dessicate this in a warm dry atmosphere, and finally reduce to fine powder in a mortar.

GLYCERINE CREAM. White wax 1 ounce, spermaceti 1 ounce, glycerine 1 ounce; melt, and pour into a mortar, and add slowly, with constant stirring, rose water 3 ounces, orange flower water 1 ounce.

GLYCERINE JELLY. Take of white soft soap 4 ounces, pure glycerine 6 ounces, almond oil 4 pounds, oil of thyme $\frac{1}{2}$ drachms; melt the soap, and add in succession the other ingredients.

GLYCERINE PASTE. Dissolve 1 ounce of gum arabic in 2 drachms of glycerine and 1 ounce of boiling water. [For office use.]

GLYCERINE SOAP (*M. Herrin*). Take 100 parts of oleine of commerce, pour it either in a glass flask if the quantity be small, or for a larger quantity into an ordinary boiler, add 314 parts of glycerine (sp. gr. 1.12) heat to a temperature of 90° Fahr., and then add 56 parts of an aqueous solution of caustic potassa (sp. gr. 1.34); stir the mixture

well; the mixture must now be kept at rest for twenty-four hours; the soap forms readily and rapidly.

GLYCERATUS. This name is given to an American substitute for simple syrup; it consists of glycerine 1 part, water 2 parts.

GLYCOBEASTOL. Under this name there has been brought out recently at Vienna a cosmetic for the hair. It is composed of glycerine in which the rind of capsicum has been digested, perfumed with patchouli.

GLYCONINE (*Sechel*). Mix in a mortar 4 parts, by weight, of the yolk of egg, and 5 parts of glycerine; the result is an unalterable compound of the consistency of honey, which forms a useful application for burns, sore nipples, and cutaneous affections.

GOLD, CHLORIDE OF (*Paris Codex*). Gold 1 part, nitrohydrochloric acid 3 parts; dissolve, evaporate until chlorine vapour begins to arise, and set aside to crystallize.

GOLD, CYANIDE OF. This may be procured by adding a solution of cyanide of potassium to a neutral solution of chloride of gold, both perfectly pure, as long as a precipitate forms, which wash and dry.

GOUT SPECIFIC. Various combinations are sold under this name, usually mixtures of wine of colchicum and aromatic tinctures, holding in solution iodide of potassium and sulphate of magnesia.

GRECIAN HAIR DYE. See **HAIR DYES.**

GUAICIN. Treat tincture of guaiacum with hydrate of lime, and decompose the resulting guaiacate of lime with dilute sulphuric acid; finally, purify by dissolving in alcohol. [Used in the preparation of photographic papers.]

GUARDS' BOUQUET. Esprit de rose 2 pints, oil of neroli 8 ounces, extract of vanilla 1 ounce, extract of orris 8 ounces, extract of musk 4 ounces, oil of cloves 30 drops.

GUM SUBSTITUTE. STARCH GUM, BRITISH GUM. *Byen's* process is to moisten a ton of dry starch with a sufficiency of water acidulated with $4\frac{1}{2}$ pounds of concentrated sulphuric acid; when this is uniformly mixed into a dough, it is cut into cubes of about 10 inches, dried in a stove, reduced to powder, and exposed in a hot air chamber to a current of air at a temperature of 160° Fahr.; it is now further ground,

sifted, and heated to about 225° Fahr.—Process patented. An inferior quality is made by treating dry potato starch to a temperature of about 400° Fahr.

GUTTA PERCHA, TO BLEACH. Make a solution of raw gutta percha in 1 pint of sulphide of carbon, slowly filter through paper, under a bell-jar; the filtered solution is now to be evaporated on thick plates of glass having raised edges. A thin film of pure gutta percha of a delicate creamy tint forms on the glass, this can be re-melted, and made into cakes.

H

HAIR DYES. **AMMONIATED HAIR DYE:** Hydrosulphate of ammonia 1 ounce, liquor of potash 3 drachms, distilled water 1 ounce. This is applied to the hair with a brush, and when dry to be followed with an application of a solution of nitrate of silver 1 drachm, in distilled water 2 ounces. **ORIENTAL HAIR DYE:** Grain silver 1 drachm, steel filings 2 drachms, nitric acid 4 drachms, distilled water 6 drachms; after digesting for several days add water 2 ounces and filter. To be applied evenly through the hair, previously freed from grease. **ORFILIA'S HAIR DYE:** Proto-oxide of lead 3 ounces, quicklime 2 ounces; reduce each separately to an impalpable powder, mix carefully, and apply with hot water, afterwards covering the hair with an oilskin cap. **CHATELL'S HAIR DYE:** Nitrate of silver 11 drachms, nitric acid 1 drachm, distilled water 1 pint, sapgreen 3 drachms, gum arabic 1 drachm; mix, and apply with a brush. **TYREAN HAIR DYE, GRECIAN WATER, EAU DE EGYPT, CHINESE HAIR DYE:** These are all merely solutions of nitrate of silver in various degrees of strength. Pyrogallic acid and walnut juice are sometimes used for producing brown shades.

HAIR DYE, NEW. To a solution of 2 drachms of acetate of lead, add 1 ounce of hyposulphate of soda; the result is a clear colourless solution, which imparts to the hair a fine dark brown. [This is probably the safest and most innoxious of the lead hair dyes.]

HAIR OIL SCENT, CHEAP, Take of oil of lavender 2

ounces, oil of rosemary 2 ounces, oil of cassia 2 drachms, oil of cloves 4 drachms. This will be found a good and economical formula for cheap oils and pomades.

HAIR RESTORATIVE. Take of rum 500 parts, rectified spirit 75 parts, distilled water 75 parts, tincture of cantharides 3 parts, carbonate of potash 3 parts, carbonate of ammonia 5 parts; dissolve the potash and ammonia in the distilled water, and add in succession the other ingredients.

HAIR STIMULANTS. Any of the following preparations may be given with effect. **CROTON LINIMENT:** Almond oil $\frac{1}{2}$ ounce, croton oil 12 drops, otto of roses 1 or 2 drops. **CANTHARIDINE OIL:** Olive oil 1 pint, cantharides freshly powdered $2\frac{1}{2}$ ounces; digest by the gentle heat of a water bath; strain through flannel. **AUGUSTINS PHOSPHORATED LINIMENT:** Phosphorus 6 grains, camphor 12 grains, almond oil 1 ounce, strong liquor of ammonia 10 or 12 drops; place the oil and phosphorus in a pipken, which immerse in warm water; when the phosphorus is quite dissolved cork and agitate; set aside in a dark place to cool; decant, and add the other ingredients.

HAIR WASH (*Erasmus Wilson*). Take of Eau de Cologne 8 fluid ounces, tincture of cantharides 1 fluid ounce, oils of rosemary and lavender of each 4 fluid drachms; mix.

HALLOGENIN. Under the name of Hallogenin the following composition is largely used in Germany for preventing the incrustation of steam boilers: 65 parts of hydrochlorate of ammonia, 17 parts of chloride of barium, and 18 parts of catechu. See **INCRUSTATION COMPOSITION**.

HARMALA RED. Digest the seed of the *Peganum harmala* in alcohol, filter, and precipitate the colouring matter from the solution by the addition of a mineral acid. The tints procured by this dye-stuff vary from a pale rose to a deep scarlet.

HEMATINE. Digest for several hours a sufficiency of ground logwood in water at a temperature of 130° Fahr.; filter and evaporate the liquor to dryness over a water bath; put the resulting extract in alcohol for four and twenty hours; filter and evaporate as before; make an aqueous solution of the extract so obtained. This solution will give, on gentle and gradual evaporation, fine crystals of pure hematine.

HIPPOCRAS WINE. This, formerly esteemed medicated

wine, was compounded of Lisbon and Canary wine of each $1\frac{1}{2}$ gallon, cinnamon 2 ounces, white canella $\frac{1}{2}$ ounce, cloves, mace, nutmeg, ginger, and cardamoms of each 1 drachm; bruise the spices and digest them in the wine for three or four days; strain and add 40 ounces of sugar.

HIPPURIC ACID. This remarkable substance, discovered by Liebig in the urine of herbivorous animals about thirty years ago, may be obtained by concentrating the fresh urine of the horse or cow by evaporation to $\frac{1}{8}$ of its bulk, and super-saturating it with hydrochloric acid; it will then after a while deposit hippuric acid in the form of a precipitate; this may be further purified by mixing with 10 parts of water and an excess of milk of lime, and pressing; the expressed liquid is mixed with a solution of alum till it no longer exhibits an alkaline reaction; cool down to 40° , add carbonate of soda as long as a precipitate forms; the liquid is again strained, pressed, and precipitated by hydrochloric acid; the hippuric acid thus formed is washed with cold water, pressed, and dissolved in boiling water; the solution is mixed with blood charcoal, filtered while hot, and left to crystallize.

HÆMATOXYLIN. This, the colouring principle of logwood, may be procured by digesting logwood chips in water at a temperature of about 130° Fahr. for several hours, filtering and evaporating to dryness; digest the product in rectified spirit for forty-eight hours, filter and evaporate as before; add a little water and set aside in a cool place till the crystals of hæmatoxylin form; these wash in rectified spirit, and dry.

HONEY OF COLCHICUM (*Beasley*). Dried colchicum 1 part, water (at 140°) 16 parts; infuse for twelve hours, strain, let it settle, and boil the clear liquor with white honey 12 parts to the consistence of syrup.

HONEY OF MALE FERN. Take of ethereal extract of male fern 30 grains, honey of roses 4 drachms; mix. Dose 2 drachms. [Anthelmintic.]

HONEY OF ROSES. Dried rose petals 4 ounces, water $2\frac{1}{2}$ pints; infuse for 6 hours and strain; decant the clear liquid, add of honey 5 pounds; evaporate to a proper consistence.

HONEY OF VIOLETS. Clarified honey 2 parts, expressed and depurated juice of violets 1 part.

HONEY WATER EAU DE MEL. Honey 1 part, clean dry sand 2 parts; place in a retort and distil as long as any liquid passes over into the receiver; this process must be carefully watched to prevent scorching.

HORSE BALLS (*Gamgee*). ALTERATIVE: Take of mercurial pill mass 1 drachm, Barbadoes aloes 1 drachm, common mass* 6 drachms: mix for bolus. ANTHELMINTIC: Take of potassio-tartrate of antimony 1 drachm, common mass a sufficiency to make a bolus; one at night, followed by a purge. ASTRINGENT: Take of aromatic confection 4 drachms, powdered rhubarb 2 drachms, powdered ginger 2 drachms, treacle a sufficiency to form a mass. CARMINATIVE: Take of pimento 1 ounce, common mass 4 ounces; make into 6 balls; one a dose. DIARRHŒA: Take of alum 2 drachms, sulphate of copper 1 drachm, common mass $\frac{1}{2}$ ounce. CHALYBEATE: Take of iron filings 4 drachms, carbonate of potash 2 drachms, powdered gentian 2 drachms, treacle a sufficiency. DIURETIC: Take of oxy-sulphuret of antimony 1 ounce, sulphur 4 ounces, nitre 4 ounces, honey a sufficiency to make into 4 balls. FEBRIFUGE: Take of emetic tartar 30 grains, digitalis 30 grains, nitrate of potash 90 grains, powdered liquorice 2 drachms, treacle a sufficiency to make a bolus. HŒMATURIA: Take of acetate of lead 15 grains, acetate of zinc 30 grains, catechu 3 drachms, common mass a sufficiency. COUGH: Take of ammoniacum 2 drachms, powdered squills 1 drachm, aloes 1 drachm, common mass a sufficiency. PURGATIVE: Take of Barbadoes aloes 2 ounces, soft soap 4 ounces, common mass 24 ounces; make into 32 balls. STIMULANT DIURETIC: Take of camphor 2 drachms, nitre 4 drachms, common mass 4 drachms; make into 1 ball. TONIC: Take of arsenic 5 grains, ginger 2 drachms, common mass 4 drachms; one ball a dose in farcy and skin diseases. VERMIFUGE: Take of iron filings 2 drachms, common salt 4 drachms, powdered savin 1 drachm, common mass 4 drachms. VERMIFUGE (another form): Take of oil of male fern $1\frac{1}{2}$ ounce, powdered ginger $\frac{1}{2}$ ounce, linseed a sufficiency to make a bolus; one a dose.

HORSE MIXTURES, DRAUGHTS, &C. (*Gamgee*). ANTIACID: Take of carbonate of soda 1 ounce, nitrate of potash 2 drachms, carbonate of ammonia 90 grains, water a sufficiency to make

* The common mass in all the above formula is composed of equal parts of ground linseed and treacle.

a draught. FEBRIFUGE: Take of extract of belladonna 1 drachm, spirits of nitric ether 1 ounce, solution of acetate of ammonia 4 ounces; mix for draught. PURGATIVE: Take of oil of turpentine 4 ounces, linseed oil 16 ounces. DIURESIS: Kreasote 30 drops, acetic acid 2 ounces, water 12 ounces; mix. TONIC ASTRINGENT DRAUGHT: Take of tannic acid 30 grains, powdered gentian 3 drachms, water 4 ounces; mix for a draught.

HORSE BLISTERS. Take of powdered cantharides 2 drachms, oil of turpentine 2 drachms, powdered euphorbium 1 drachm, oil of thyme 1 drachm, prepared lard 2 ounces; mix for blister. This very active preparation requires caution in its use. CANTHARIDINE BLISTER: Take of tartar emetic 1 drachm, cantharidine ointment 2 ounces; mix. This excellent blister is equally well adapted for horses and cattle.

HOOF OINTMENT: Take of Barbadoes tar, Burgundy pitch, and mutton suet, of each equal parts. Make an ointment.

HORSE POWDERS (*Gamgee*). ALTERATIVE: Take of sulphur 1 ounce, sesqui-sulphuret of antimony 4 drachms, nitrate of potash 2 drachms. To be given in the horse's food. DIURETIC: Take of colchicum seeds 2 ounces, cantharides 1 ounce; make into 3 powders for horse or ox. FOR LARYNGOPHARNGITIS: Take of iodide of potassium 1 drachm, calomel 1 drachm, powdered belladonna 1 ounce, white sugar 2 ounces; divide into 4 equal parts; to be placed on the tongue.

HUILE ACOUSTIQUE. Take of garlic and bay leaves of each $\frac{1}{2}$ ounce, olive oil $\frac{1}{2}$ pound; boil these together for 15 minutes and strain. A few drops on cotton wool are useful in earache.

HUILE ANTIQUE A LA ROSE. Olive oil 1 pound, fresh rose leaves 1 pound; infuse seven days with as many relays of fresh flowers; colour with alkanet to taste; considerable pressure must be used in straining.

HUILE ANTIQUE AU CHEVRE FEUILLE. Olive oil 1 pound, honeysuckle flowers fresh 1 pound; proceed as for HUILE ANTIQUE A LA ROSE.

HUMULIN. Make a strong tincture of hops by percolation with rectified spirit; the same hops are then exhausted with water; distil off the spirit from the tincture; skim off the

aqueous portion, and add to the infusion, evaporate this to the consistency of an extract; now add the oleo-resinous residuum of the tincture, and well mix.

HUNGARY WATER. EAU DE HONGRIE. This is sometimes prepared by simply dissolving the oils of rosemary and sage in rectified spirits. The following is stated by Cooley to be the original receipt for this favourite *Eau*: Take of rosemary in bloom 2 pounds, sugar, fresh 4 ounces, rectified spirits 3 quarts, water 1 quart; digest for 10 days and add, previous to passing through the still, $1\frac{1}{2}$ pound of common salt; distil over 6 pints, add of Jamaica ginger bruised 1 ounce; digest and filter; the ginger must not be added previous to filtration.

HYDRATE OF CHLORAL. See CHLORAL HYDRATE.

HYDRATE OF CHLORAL MIXTURE, PALATABLE. Take of hydrate of chloral 30 grains, chloroform water (made by dissolving 4 drachms of chloroform in a gallon of water) 2 drachms, syrup of orange 2 drachms, tincture of ginger 12 drops, water $1\frac{1}{2}$ ounces. This formula is recommended as intensifying the action, while it covers the taste of this valuable medicine.

HYDRASTIN. Make an infusion of the root of *Hydrastis canadensis*, or golden seal (in coarse powder), by percolation with cold water, collect the precipitate thrown down by the addition of hydrochloric acid; this dry and dissolve in alcohol; filter and set aside for the crystals of hydrastin to form themselves. Dose 3 grains.

HYDROCHLORATE OF APOCODEIA (Matthieson). When hydrochlorate of codeia is heated to a temperature of 340° Fahr. with an excess of a concentrated solution of chloride of zinc, for about fifteen minutes, it becomes decomposed, and on cooling a brownish mass of somewhat glutinous character is deposited. This forms hydrochlorate of apocodeia; from this the pure base may be obtained by dissolving in hot water, and precipitating by means of hydrochloric acid; redissolving in water, and precipitating with carbonate of sodium, and finally extracting the pure base with ether.

HYPNOTIC SOLUTION. Chloral hydrate 4 parts, orange syrup 15 parts, distilled water 15 parts; mix. Dose, a medium-sized spoonful at bedtime.

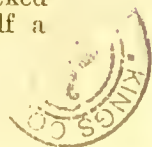
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ICES. These are simply formed of water or cream frozen by artificial means, and flavoured by various liqueurs, fruits, or fruit essences. In the absence of special apparatus for their manufacture, the following utensils will be found sufficient for the production of these increasingly popular articles of refreshment. An ice-tub to hold 50 pounds of pounded ice, a freezing-pot of pewter, fitted with a lid of the same metal, a spatula of copper. When the ice-tub is prepared with fresh pounded ice mixed with a sufficiency of salt, the freezing-pot is to be placed therein nearly down to its rim in the freezing mixture; the liquor to be congealed is now to be poured in, and the whole covered over till the action of freezing commences, when a rotatory motion must be kept up by turning the freezing-pot briskly round in the ice-tub. The copper spatula is to be occasionally used in scraping down any ice forming on the sides of the freezing-pot, which would otherwise induce "lumpiness" and spoil the appearance of the ice, which also depends on the constant agitation of the freezing mass.

ICES, CREAMS FOR, PLAIN. Take of fresh cream 1 pint, the yolks of 8 eggs and the peel of 1 lemon; beat the yolks and mix gradually with the cream, add the lemon peel pared extremely fine, put the whole in a well tinned saucepan, set over a slow fire and stir till the cream begins to thicken; as soon as this has taken place remove the whole from the fire, continuing to stir at intervals until cool; add then a little sifted sugar.

ICE CREAM, ORGEAT. Take of bitter almonds 1 ounce, sweet almonds 1 ounce, fresh cream 1 pint, the yolks of 8 eggs, sifted sugar 4 ounces; blanch and pound the almonds with a little orange flower water; beat the yolks, add the sugar, and stir all together gently into the cream; put the whole on the fire, stirring briskly till it begins to thicken, take off and stir till cool, when it will be ready for the freezing pot.

ICE CREAM, STRAWBERRY. Take of fresh-picked strawberries 1 pint, thick cream 1 pint, the juice of half a



lemon, and sugar to taste; mash and strain the juice of the fruit; add some sugar finely pounded and the cream; pass the whole through a sieve into the freezing pot. Raspberry, currant, and pine-apple ices may be made in the same way.

ICE (SUGAR, FOR FANCY CAKES, &C.) Beat and sift 8 ounces of fine loaf sugar; mix in a mortar with 4 spoonfuls of rosewater, the whites of 2 eggs, beaten into a froth and strained; whisk these ingredients together, and with a brush cover the cakes while warm from the oven.

IMPERIAL (Cooley). The summer beverage of this name is made by the admixture of cream of tartar $\frac{1}{4}$ ounce, 1 lemon sliced, lump sugar 2 ounces, boiling water 1 quart; infuse with occasional stirring until cold, then pour off the clear portion for use.

INCENSE. Take of gum olibanum 7 parts, gum benzoin 2 parts, casearilla 1 part; triturate in a mortar.

INCORUSTION COMPOSITION. Various chemicals are had recourse to for the purpose of removing the deposits which form themselves in steam boilers, and are sold under this name; of these the most successful are sal ammoniac, and carbonate of soda; the latter, by the recommendation of Dr. Craze Calvert, is largely used by English engineers.

INDIGO. This dye-stuff, sometimes used in medicine, is procured by macerating the *Indigofera tinctora* or other species of the indigo plant in water till fermentation commences; the colouring matter forms with the water a yellow solution; this must be drawn off and well whisked to bring all parts of it under the influence of the air, after continuing this for a couple of hours the indigo will be precipitated in the form of a blue paste; it is now made into cakes and dried.

INDIGO PURPLE is obtained by filtering a solution of indigo in fuming sulphuric acid largely diluted with water.

INDIGO RED is obtained by the action of boiling alcohol on indigo already exhausted by dilute acids and a strong alkaline solution.

INDIGO WHITE. Carefully protect from atmospheric contact the alkaline solution obtained in the next process (**INDIGOTIN**), precipitate with hydro-chloric acid; wash the

precipitate with very dilute sulphurous acid; drain on a filter, and dry *in vacuo*; preserve in well stoppered bottles.

INDIGOTIN. Digest indigo in fine powder in dilute sulphuric acid, solution of potassa, and alcohol successively; the dried residuum is Indigotin.

INDIANITE. This new cement is prepared by mixing 100 parts of finely chopped rubber with 15 parts of resin, and 10 parts of shellac, and dissolving them in a sufficient quantity of bisulphide of carbon.

INDISINE. See ANILINE VIOLET.

INFANT'S PRESERVATIVE, ATKINSON'S (Cooley). Carbonate of magnesia 6 drachms, white sugar 20 drachms, oil of aniseed 20 drops, compound spirit of ammonia and rectified spirit of each 150 drops, tincture of opium 60 drops, syrup of saffron 1 ounce, caraway water sufficient to make up to a pint.

INJECTION, ANTIBLENNORHAGIC (Rollet). Take of extract of rhatany 20 parts, sulphate of zinc 1 part, water 2000 parts; make a solution to be used as an injection three or four times a day.

INK, MARKING ANILINE. This is formed by a mixture of the two following solutions. Solution No. 1: Chloride of copper in crystals 8.52 parts, chlorate of soda 10.65 parts, chloride of ammonium 5.35 parts, distilled water 60.00 parts, Solution No. 2: Hydrochloride of aniline 20 parts, distilled water 40 parts, gum arabic 6 parts, glycerine 10 parts. When required for use 1 part of Solution No. 1 is mixed with 4 parts of Solution No. 2. It is necessary to keep the solutions separate until required for use. The colour given is a green changing into an unalterable black.

INK, BLACK (GERMAN). A sufficiency of bruised elderberries are placed in an earthen vessel, kept in a warm place for three days, and filtered; to 12½ quarts of this juice add 1 ounce of sulphate of iron, and 1 ounce of pyroligneous acid. This ink gives a fine violet tint which dries an intense black.

INK, BLUE-BLACK COPYING. Aleppo galls bruised 5½ ounces, cloves bruised 2 drachms, sulphate of iron 1½ ounce, sulphate of indigo 1½ ounce, sulphuric acid 35 drops, rain water cold 40 ounces; macerate the galls and cloves in 20 ounces of the water for eight days, decant and add to the

solid residue 10 ounces of water, macerating for four days. Mix now the whole of the liquor, and finally add in the order named the sulphate of iron, the sulphuric acid, and the indigo.

INK, BLUE (*M. Harung*). Mix 4 parts of perchloride of iron in 750 parts of water; add 4 parts of cyanide of potassium dissolved in water; collect the precipitate, which wash with several additions of water; allow it to drain until it weighs about 200 parts; add finally 1 part of oxalic acid, and agitate to facilitate the solution of the cyanide.

INK, BLUE. Take of Chinese blue 2 ounces, boiling water 1 quart, oxalic acid 1 ounce; dissolve the blue in the water, add the acid, and bottle.

INK, COPYING (*Watts*). Take of logwood extract 4 parts by weight, 3 parts of sulphate of iron, 2 parts of alum, 2 parts of gum arabic, 4 parts of sugar, 60 parts of malt vinegar, and 40 parts of water; dissolve the logwood in the water, adding in succession the other ingredients.

INK, GOLD. Gold leaf ground into an impalpable powder, and mixed when required in gum water.

INK, GREEN (*Klaproth*). Take of acetate of copper 2 ounces, bitartrate of potash 1 ounce, water 8 ounces; boil down to 4 ounces and filter.

INK FOR GARDENERS' ZINC LABELS. Take of acetate of copper 30 parts, muriate of ammonia 30 parts, lamp black 8 parts, gum arabic 8 parts, water 300 parts; dissolve the gum in the water, and pour it over the other ingredients, well mixed and reduced to powder. A quill pen must be used with this preparation.

INK, INDELIBLE BLACK. Dissolve 4 parts by weight of aniline in 16 by weight of alcohol to which a few drops of strong hydrochloric acid has been added; dilute with 90 parts of water in which 6 parts of gum arabic has been dissolved; the result is an anticorrosive ink of great brilliancy.

INK, INVISIBLE. An ink to turn blue on the application of heat may be procured by dissolving chloride of cobalt in water. Rose colour and green may be procured by means of acetate of cobalt, and chloride of cobalt and nickel respectively.

INK, MARKING (*Soubeiran*). Nitrate of copper 3 parts, carbonate of soda 4 parts, nitrate of silver 8 parts; mix, and dissolve in 100 parts liquor of ammonia; to be applied with a quill pen, and developed by heat.

INK, RED. Infuse a sufficiency of Brazil wood chips in weak vinegar, boil for an hour, strain, and add a small quantity of gum arabic and sugar. The colour will be enriched by the addition of a little powdered alum.

INSECTICIDE POWDER. Of the various insect-destroying powders before the public, the most efficacious have for their basis the tubular florets of the *Pyrethrum roseum caucasicum* reduced to a fine powder.

INSECT POISON (*Cloez*). Take of quassia chips 2½ ounces, stavesacre seed powdered 5 drachms; digest in 7 pints of water, evaporate at a temperature of 212° to 5 pints. This liquid applied with a syringe or otherwise is a perfect annihilator of plant and other insects.

IODBENZIL. As this body is very ready to undergo double decomposition, it will be found very suitable for the preparation of benzil compounds. It is formed by the action, at the ordinary temperature, of hydriodic acid upon chloride of benzil; the result being a solid crystalline mass of iodbenzil fusing at 24°.

IODIC ACID. Decompose iodate of baryta by dilute sulphuric acid.

IPECACUANHA, SYRUP OF. The following American formula makes a syrup which will keep without deterioration for a lengthened period:—Take of fluid extract of ipecacuanha (U. S. P.) 17 drachms, granulated sugar 32 ounces, water 16 fluid ounces. Pour the fluid extract on the sugar in a shallow evaporating dish, and set aside in a warm place to dry; when dry add the water, and dissolve the sugar with the aid of a gentle heat.

IRON, SACCHARATE OF. According to Dr. Gerhard the best way to prepare saccharate of iron is to take a measured quantity of perchloride of iron, and precipitate the iron in the form of hydrate of peroxide, to which after careful washing, a small quantity of caustic ammonia is to be added; it is now dissolved at once in simple syrup with aid of heat.

ISSUE PEAS (*Dr. Gray*). Bees wax 12 parts, verdigris and white hellebore of each 4 parts, orris root 3 parts, cantharides 2 parts, Venice turpentine a sufficiency.

J

JALAPIN. Coarsely powdered jalap is digested in strong acetic acid for a fortnight, and the product filtered, ammonia added in excess, and the whole agitated strongly; when this is filtered, the deposit washed in cold water, redissolved in acetic acid, and reprecipitated in ammonia, the precipitate is pure jalapin; it may be washed and dried in the usual way.

JELLY, ALMOND. Milk of almonds 5 ounces, hartshorn jelly 10 ounces, sugar 2 ounces, may be flavoured with lemons; heat together, strain, and mould.

JELLY, CORSICAN MOSS (*Paris Codex*). Take of Corsican moss (*Graicilaria helminthocorton*) 1 ounce, water a sufficiency; boil one hour and strain off 8 ounces, add 1 drachm of isinglass previously soaked in a little water, fine sugar 2 ounces, white wine 2 ounces. Considered a useful vermifuge.

JELLY, CINCHONA (*Gelatina lichenie cum cinchona: Paris Codex*). Soak 2 ounces of Iceland moss in water for 24 hours, boil it for one hour in a sufficiency of water to make a strong jelly, strain; decant the clear portion, in this dissolve with the aid of heat 1 drachm of isinglass, and 6 ounces syrup of cinchona; evaporate to a proper consistency.

JOCKEY CLUB BOUQUET. Take of tincture of orris 5 ounces, essence of cassia 10 drachms, essence of tuberose 10 drachms, essence of ambergris 10 drachms, oil of bergamot 30 drops, otto of roses 1 drachm, rectified spirit 14 ounces; digest for twenty-eight days.

JELLY, HARTSHORN (*Paris Codex*). Hartshorn shavings 8 ounces, wash in water and boil in 3 pints of fresh water till reduced to 15 ounces, add 4 ounces sugar, the juice of 1 lemon, and the white of 1 egg beaten up in a little water; mix well by the aid of heat, evaporate till it forms a jelly on cooling.

K

KALI, ACIDULATED. Take of sesqui-carbonate of soda and tartaric acid of each 5 ounces, lump sugar 16 ounces; all the ingredients must be in the state of fine powder and thoroughly dry previous to admixture; rub them together through a fine sieve, flavour with 60 drops of oil of lemons; put into bottles (dry and slightly warm), and well cork.

KALYDOR. This very celebrated cosmetic is made somewhat as follows:—Take of bitter almonds blanched 1 ounce, corrosive sublimate 8 grains, rose water 16 ounces; mix.

KING'S CUP. See **SHERBET.**

KIRSCHWASSER. This favourite alcoholic liquor of the Germans is obtained by distilling the fermented juice of the cherry. At the proper season the cherries fully ripe are gathered from the trees, thrown into tubs, crushed with a beater, and set to ferment; when fermentation is completed, the liquor is sent to the still, and the spirit passed over.

KOUSMISS (KOUMISS). This Eastern spirit is prepared by the simple process of fermenting mare's milk, and subjecting the fermented liquor to distillation.

KNOX'S DISINFECTING POWDER. Take of common salt 8 parts, chloride of lime 3 parts; mix.

KREASOTE (CREOSOTE). Dr. Ure remarks:—If we, in operating upon pyroligneous acid, dissolve effloresced sulphate of soda in it to saturation, at the temperature of 267° Fahr., kreasote separates and floats upon the surface, it is then decanted and left in repose for some days, during which it deposits a fresh portion of salt and vinegar; it is next saturated (while still hot) with potassa carbonate; it is now distilled along with a portion of water, a pale oily liquid passes over; this is rectified with phosphoric acid. Kreasote, if perfectly soluble in potash and acetic acid of the density 1.070, and if its colour be unaffected by exposure to atmospheric contact, may be considered as sufficiently pure for ordinary pharmaceutical purposes.

L

LABDANUM, ARTIFICIAL (*Cooley*). Take of gum anise, resin, Venetian turpentine and sand of each 6 parts, Spanish juice and gum arabic of each (dissolved in a little water) 3 parts, Canada balsam 2 parts, ivory black 1 part, balsam of Peru a sufficiency to impart a slight odour.

LACTIC ACID (*Scheele's process*). Sour whey is first evaporated to one-eighth of its bulk, saturated with slaked lime and filtered; after adding three or four times the quantity of water, the lime is cautiously precipitated with oxalic acid in solution; the liquor is filtered and gently evaporated to dryness in a water bath; digest the residuum in alcohol, again filter and evaporate. Given in doses 1 to 5 grains in dyspepsia, gout, and calculus.

LAIT DE FRACHEUR. Rose water 8 ounces, tincture of benzoin 4 drachms.

LAIT VIRGINAL. Orange flower water 8 ounces, tincture of benzoin 2 drachms; mix together very slowly in a mortar, to produce a semi-opaque fluid.

LAVENDER WATER (*Dr. Pereira*). Oil of lavender 3 drachms, oil of bergamot 3 drachms, oil of roses (otto) 6 drops, oil of cloves 6 drops, musk 2 grains, oil of rosemary (best) 1 drachm, honey 1 ounce, benzoic acid 40 grains, rectified spirits 20 ounces, water 3 ounces. [A very superior preparation.]

LEAD, PYROLIGNATE OF. This is sugar of lead made with rough pyroligneous acid, and principally used in dyeing operations.

LEAVES, MEDICATED. Medicated leaves, such as belladonna, opiated belladonna, camphor, henbane, &c., are popular on the Continent; they are generally prepared in the form of cigarettes (q : v.) The following will be a sufficient illustration of this class of pharmaceutical preparations:
OPIATED BELLADONNA: 1 ounce of Belladonna leaves are steeped in an infusion of 10 grains of opium, 1 ounce of water, and dried with care. [Used in asthma, and other affections of the respiratory organs.]

LEMONADE, AERATED. Lemonade, and other aerated waters, may be manufactured without a machine in the following manner:—First fit each bottle carefully with a cork, and fill into each 12 drachms lemon syrup, 30 grains sesqui-carbonate of soda; nearly fill the bottle with water, and add 1 drachm of tartaric acid in crystals, instantly corking down, and inverting the bottle.

LEMONS, ARTIFICIAL OIL OF (*Dussauce*). Spirit of turpentine 1 gallon, rectified spirit 3 quarts, nitric acid 1 quart; agitate the mixture in an earthen vessel, and let it rest for a month; a quantity of hydrate of spirit of turpentine results, this, submitted to the action of hydrochloric acid, loses a part of its water of crystallization, and is transformed into a hydrochlorate; this heated to disengage a portion of the acid, and treated with potassium, is transformed into a thin colourless oil possessing all the properties of oil of lemons.

LEMON CREAM. New cream 1 ounce, new milk 8 ounces, lemon juice 1 ounce, eau de cologne 1 ounce, alum in powder 1 ounce, sugar 1 drachm. An agreeable and useful application to a sunburnt skin.

LIME, SACCHARATE. This will be found a useful form in which to administer lime to children. Dr. Schön recommends the precipitate of saccharate of lime, which is obtained by precipitating a solution of milk of lime in syrup by the agency of alcohol; the neutral saccharate so obtained is readily soluble in water or syrup at ordinary temperatures.

LIME JUICE AND GLYCERINE (INSEPARABLE). Lime juice 10 ounces, rose water 5 ounces, rectified spirit (added gradually) 2 ounces; shake well together, after four and twenty hours strain through muslin, and add oil of lemon 30 drops, oil of lavender 30 drops, glycerine $2\frac{1}{2}$ ounces; shake well. The essential oils should be dissolved in a little spirit previous to admixture.

LIME-JUICE AND GLYCERINE (Imitation). Lime water 10 ounces, almond oil 10 ounces, oil of bergamot 30 drops.

LINCTUS, COUGH. (*Latham's*) Take of Dover's powder 30 grains, compound tragacanth powder 2 drachms, syrup of tolu, confection of hips, and simple oxymel of each 1 ounce. Dose 1 teaspoonful.

LINIMENT, AMBER. Take of olive oil 6 ounces, oil of amber 2 ounces, oil of cloves 2 ounces. [A valuable application in hooping cough.]

LINIMENT, AMAUROSIS (*Ware*). Take of camphor liniment 1 ounce, solution of carbonate of potash 1 drachm.

LINIMENT OF BELLADONNA (*Guy's Hospital*). Extract of belladonna 1 ounce, soap liniment 8 ounces.

LINIMENT OF COD LIVER OIL (*Dr. Brach*). Cod liver oil 8 ounces, ammonia 4 ounces; mix. [Invaluable in the scrofulous enlargements of childhood.]

LINIMENT, RUBIFACIENT HUNGARIAN (*Soubeiran*). Take of powdered cantharides and sliced garlic of each 1 drachm, camphor, mustard seed, and black pepper of each in powder 4 drachms, strong vinegar 6 ounces, rectified spirit 12 ounces; macerate seven days, and strain.

LINIMENT OF IODIDE OF POTASSIUM. To a solution of 2 drachms of iodide of potassium in 1 ounce of proof spirits, add a solution of 3 drachms of curd soap in 1 ounce of proof spirit, both slightly warmed, add oil of neroli 5 drops; to be kept in a wide-mouth stoppered bottle.

LINIMENT OF MUSTARD. Black mustard seed bruised 8 ounces, oil of turpentine 1 pint; digest for several days and strain with pressure, add 4 ounces camphor, and filter. [Valuable in rheumatism.]

LINIMENT OF NUX VOMICA (*Magendie*). Liquor of ammonia 1 drachm, tincture of nux vomica 4 drachms. [Useful in paralysis, &c.]

LINIMENT, PHOSPHORATED (*Augustin*). Take of phosphorus 6 grains, camphor 12 grains, oil of almonds 1 ounce; dissolve the camphor and phosphorus in the oil by the aid of a gentle heat, decant, and add 10 drops of liquor of ammonia. [In gout, &c.]

LINIMENT OF VERATRINE (*Brande*). Dissolve 16 grains of veratrine in 1 ounce of alcohol, afterwards adding 1 ounce of soap liniment. [May be applied with good effect in cases of neuralgia, &c.]

LINT, MEDICATED. This is prepared by steeping surgeon's lint in a solution composed of 30 grains each of sulphate of copper and nitrate of silver in 12 drachms of

distilled water, and drying in the open air. [Intended as a dressing for obstinate ulcers.]

LIP SALVES. POMADE ROSAT: White wax 2 ounces, almond oil 4 ounces, alkanet root sufficient to colour; melt, digest, and strain, adding otto of roses 12 drops. GLYCERINE LIP SALVE: White wax 1 ounce, spermaceti 2 ounces, almond oil 8 ounces; melt in a water bath, and add of glycerine 3 ounces, balsam of Peru 4 drachms. CREME DE PSYCHE: White wax 1 ounce, spermaceti 1 ounce, almond oil 5 ounces, balsam of Tolu 1 drachm; melt and add 10 grains of acetate of lead, pounded.

LIQUEUR DE LE GRANDE CHARTREUSE, According to Dr. Chevalier, this highly celebrated liqueur is made by mixing together essence of *melissa citrata* 2 parts, essence of hyssop 2 parts, essence of angelica root 10 parts, essence of best mint 20 parts, essence of nutmeg 2 parts, essence of cloves 2 parts, and rectified spirits 1000 parts. The liqueur is artificially coloured with turmeric.

LIQUEUR DE PRESSAVIN. Freshly precipitated oxide of mercury and cream of tartar of each 1 ounce; dissolve in 1 quart of hot water, filter. Dose, a small wineglassful in all cases where mercury is considered useful.

LIQUID FOR CLEANING SILVER. Take of prepared chalk 8 ounces, turpentine 2 ounces, alcohol 1 ounce, spirits of camphor 4 drachms, liquor of ammonia 2 drachms. Apply with a sponge and allow to dry before polishing.

LIQUID GLUE (*Dumoulin's*). Dissolve 1 pound of the best glue in 1 pint of water, add gradually $3\frac{1}{2}$ ounces of nitric acid; after the mixture has ceased to effervesce set aside to cool.

LIQUOR BISMUTHI. Take of subcarbonate of bismuth 1 troy ounce, citric acid in powder 420 grains, nitric acid (sp: gr: 1.420) $1\frac{1}{2}$ troy ounce, pure caustic potash 450 grains, distilled water and alcohol, of each a sufficiency. Dissolve gradually the subcarbonate of bismuth in the nitric acid and when effervescence has ceased dilute the solution with $1\frac{1}{2}$ ounce of distilled water, add the citric acid and stir until dissolved. Dissolve the caustic potash in 8 fluid ounces of distilled water, which add very gradually to the acid solution; permit the mixture to stand five or six hours; transfer to a moistened paper, filter and wash the precipitate till the washings contain no trace of nitrate of potash;

transfer the still moist *magma* and add very gradually water of ammonia until the precipitate is dissolved and a neutral solution is obtained. Dilute the solution with an equal quantity of distilled water. Treat $\frac{1}{2}$ fluid ounce of the liquid with hydrosulphate ammonia in slight excess; wash the precipitate on a tarred filter, and dry on a water bath and weigh. Multiply the weight of the sulphide of bismuth by the fraction .908, to determine its equivalent in teroxide of bismuth. Apply the same ratio to the remainder of the liquid and dilute to such an extent that 1 fluid drachm will contain 1 grain of teroxide of bismuth; $\frac{7}{8}$ of which must be made up of distilled water, and the remaining measure of alcohol.

LIQUOR FERRI PERCHLORIDI (*French formula*). A solution of protochloride of iron is made with hydrochloric acid and iron wire, care being taken to prevent the access of air as much as possible. This solution is poured into a Woolf's flask, and a current of pure chlorine gas is made to pass through it until the protochloride is converted into a perchloride. The solution is now evaporated in a porcelain evaporating dish, at a temperature under 122° Fahr. When the required density is obtained, to get rid of the last trace of chlorine a current of air is passed through the solution. The preparation obtained by this process is perfectly neutral and transparent.

LIQUOR OF OPIUM. Take of powdered opium $1\frac{1}{2}$ ounce, lemon juice $1\frac{1}{2}$ pint; infuse and evaporate to 15 ounces, add 5 ounces of rectified spirit, filter after standing twenty-four hours. [Similar to the once celebrated BLACK DROPS.]

LITMUS PAPER. Faraday prepared his litmus paper by soaking sheets of unsized white paper in an infusion of 1 ounce of litmus in $\frac{1}{2}$ pint of hot water.

LOBELINA. This is obtained from the seeds of *Lobelia inflata* by maceration in rectified spirit, acidulated with acetic acid, evaporating and treating the product successively with magnesia and ether, and finally again evaporating.

LOTION, COSMETIC (*Augustin's*). Rose water 8 ounces, salt of tartar 2 drachms, tincture of benzoin 3 drachms.

LOTION, COSMETIC (*Dr. Copland*). Almond mixture 3 ounces, rose water 4 ounces, orange flower water 4 ounces, biborate of soda 1 drachm, tincture of benzoin 3 drachms.

LOTION OF ARNICA (HOMEOPATHIC). Take of glycerine

3 ounces, arnica root 1 ounce, spirit of camphor $\frac{1}{2}$ ounce, rose water a drachm. For chilblains, to be well rubbed in night and morning if the skin is not broken. [This lotion ought not to be applied to an abraded surface.]

LOTION FOR CHILBLAINS (*Dewar's*). Take of sulphurous acid 1 ounce, glycerine 1 ounce, distilled water 2 ounces; mix.

LOTION FOR CHAPS (*Liebert*). Take of nitrate of lead 10 grains, rose water 1 ounce.

LOTION FOR FRECKLES (*Kittoe*). Muriate of ammonia 1 drachm, spring water 1 pint, lavender water 2 drachms.

LOTION OF GLYCERINE (*Moore*). Glycerine 3 ounces, mucilage of quince seeds 10 drachms, powdered cochineal 5 grains, boiling water $1\frac{1}{2}$ ounce, rectified spirits $2\frac{1}{2}$ ounces, oil of roses 8 drops, powdered gum acacia $\frac{1}{2}$ drachm, water 8 ounces; triturate the cochineal in the hot water, adding the spirit; in the same manner mix the rose oil with the powdered gum; mix and filter the solutions, and add the mucilage and glycerine.

LOTION FOR THE HAIR (*Locock*). Almond oil 2 drachms, liquor of ammonia 2 drachms, oil of mace 1 drachm, rose water $2\frac{1}{2}$ ounces.

LOTION FOR SCABIES (*Vlemnick*). Take of quicklime 1 pound, slack with a sufficiency of water, sublimed sulphur 2 pounds, water 20 pounds, mix and boil until reduced to 12 pounds, and filter. Apply as a wash with a bit of flannel.

LOTION FOR SCABIES (*Professor Hebra*). Take of Seneka oil (petroleum oil) 1 ounce, alcohol 1 ounce, Balsam of Peru 1 drachm, oils of rosemary, lemon, and lavender, of each 22 drops; mix.

LOTION FOR WHITLOW. Take of liquor of acetate of lead 15 parts, glycerine 25 parts, distilled rose water 100 parts, distilled cherry laurel water 20 parts.

LUPULINA (*Coolcy*). The yellow powder obtained from the dried strobiles of the hops yields an aqueous extract, which is treated with alcohol along with a little lime; the filtered tincture is evaporated to dryness, redissolved in water, the solution again filtered and evaporated to dryness; the residuum is lastly washed with ether, and allowed to dry.

M

MACASSARINE OIL. Take of oil of ben 1 gallon, oil of noisette $\frac{1}{2}$ gallon, alcohol 1 quart, oil of roses 2 drachms, oil of bergamot 3 ounces, oil of Portugal 3 ounces, tincture of musk 3 ounces; colour with alkanet root; digest and strain. The following is said to be in all essential particulars analogous to the celebrated "Macassar Oil":—Take of castor oil reddened with alkanet 20 ounces, alcohol (66 o. p.) 5 ounces, oil of nutmeg 30 drops, oil of rosemary and oil of thyme of each 15 drops, oil of neroli 10 drops, essence of musk 5 drops. Should the ingredients not mix thoroughly, shake the bottle (tightly corked) in a vessel of warm water, gently agitate till quite cold, and decant.

MADDER LAKE (*Perosoz*). Take of madder 1 ounce; wash in a solution of sulphate of soda; boil for 15 minutes in $\frac{1}{2}$ a pint of water in which has been dissolved 1 ounce of alum, filter, and when the temperature has been reduced to 100° Fahr., mix with a solution of 1 drachm of carbonate of soda; raise the temperature to boiling point, when the lake will be precipitated. The madder ought to be treated several times with boiling alum water to thoroughly exhaust it of its colouring matter. This lake consists chiefly of purpurine.

MAGNESIUM. This metal may be obtained by heating 600 grains of chloride of magnesium, 100 grains of fused chloride of sodium, and 100 grains of pulverised fluoride of calcium to a red heat in a covered earthen crucible. The magnesium is thereby obtained in globules, which are to be brought to a white heat in a vessel of charcoal placed within a second vessel of the same material fitted with a cover, and brought under the influence of a stream of dry hydrogen. The magnesium which is thus volatilised is now to be condensed and remelted with a flux of chloride of magnesium, chloride of sodium, and fluoride of calcium; it is thus obtained in large globules, which are now to be purified by distillation in a stream of hydrogen.

MALT EXTRACT (*Ebert*). "Take of barley malt kiln-dried 10 pounds, water a sufficiency; reduce it by means of

the drug mill so that it will pass through a No. 20 sieve, and add to the meal a sufficient quantity of cold water to form with it a soft dough; then add about 2 gallons of hot water, and apply heat so as to raise the temperature of the mixture to 150°, or not to exceed 158°. Maintain this temperature, with occasional stirring, for several hours, or until the whole of the starch is converted (by means of the diastase of the malt) into dextrine and glucose. The absence of starch can be ascertained by the application of tincture of iodine to a small quantity of the liquor, when, if the starch has been wholly converted, no blue coloration will be evident. Then express the liquor rapidly, and pass it through a strainer. This is the most difficult part of the process, as it speedily clogs the strainer. This can be averted to some extent by making a pulp by means of water from common unsized paper, or filtering-paper, and mixing this pulp with the expressed liquid previous to straining. The perfectly clear fluid is finally to be evaporated, by means of a water-bath, to the consistence of a thick syrup, having the sp. gr. 1.500, or approximately 1 pint, weighing 1½ pound av." Keep in a cool place.

MANNA, ARTIFICIAL. Powdered sugar, powdered tragacanth, and flour, of each 1 pound, finest Aleppo scammony 6 drachms; make into a suitable consistency with water.

MANGE OINTMENT. Take of sulphur 1½ ounce, oil of juniper 4 drachms, resin ointment 2 ounces. To be rubbed in one day, and washed off next.

MARROW POMMADE. Beef marrow 1 pound, annato 2 drachms, oil of bergamot 1 drachm, tincture of tolu 2 drachms; mix by the gentle heat of a water bath.

MARSEILLES VINEGAR. See VINIGRE DE QUOTRE VOULRES.

MEAT BISCUITS. Make a soft dough by mixing together fine wheat flour and fluid extract of beef; mould into shapes and bake in the usual way.

MILK, GOAT'S, ARTIFICIAL (*Thomson*). Mutton suet, minced, 1 ounce; tie in a fine muslin cloth and boil in 1 quart of cow's milk, adding 2 drachms of sugar candy.

MILK, PRESERVED. Dissolve carbonate of soda ½ drachm in water 1 ounce, adding fresh milk 1 quart, sugar 1 pound; reduce it by heat to the thickness of syrup; spread on plates to dry by exposure to the sun.

MILK OF ROSES (Miscible with glycerine). In 1 pint of water dissolve $\frac{1}{2}$ an ounce of white curd soap, in which solution beat up 6 ounces of picked Jordan almonds. The glycerine, when used, should be added at this stage; then in a warm mortar add to the mixture thus obtained 2 ounces of almond oil and $\frac{1}{2}$ an ounce of spermaceti, melted separately; add lastly 4 ounces of Eau de Cologne.

MILK OF ROSES (*English*): Take of almonds blanched $1\frac{1}{2}$ ounce, oil of almonds and white Windsor soap of each 1 drachm, rose water 15 ounces; make an emulsion; to the strained emulsion add spirit of roses 30 drops, alcohol $2\frac{1}{2}$ fluid ounces. When the above ingredients have been well mixed, make up to a pint with rose water.

MILK OF ROSES (*French*): Tincture of benzoin (simple) $\frac{1}{2}$ fluid ounce, tincture of storax 2 drachms, spirit of roses 2 fluid drachms, alcohol $2\frac{1}{2}$ fluid ounces; mix, and gradually add, with agitation, rose water $16\frac{1}{2}$ fluid ounces. Augustin recommends the addition of a drachm of carbonate of potash, when the milk of roses is to be used as a lotion in *acne*. MILK OF ROSES (*German*): Dilute solution of diacetate of lead 4 drachms, lavender water 2 drachms, alcohol $2\frac{1}{2}$ fluid ounces, rose water 15 ounces; mix, with agitation. This preparation, though valuable in some forms of skin disease, is too powerful for general use.

MILK OF WAX. Dissolve pure yellow wax $2\frac{1}{2}$ ounces, in oil of turpentine 20 ounces.

MILLEFLEURS, ESSENCE OF. Lavender water, strongest, 1 ounce, esprit de jasmine 1 ounce, oil of bergamot 90 drops, cassia 30 drops, oil of sassefras 12 drops, otto of roses 4 drops, orange-flower water 8 ounces, rectified spirit 1 pint.

MINERAL LEMONADE. Under this designation there is sold at the pharmacies and cafés of Paris, Berlin, and Vienna a cooling summer beverage which seems to possess considerable advantages over those made in this country with vegetable acids, such as the citric and tartaric. It is composed of 1 drachm of Hallar's acid solution dissolved in $\frac{1}{2}$ pint of water, with the addition of 1 drachm of fruit syrup.

MIXTURE, ASTRINGENT (*Thomson*). Tincture of catechu 1 ounce, cinnamon water 8 ounces; dissolve; 1 to 2 table-spoonsful a dose.

MIXTURE, COUGH (*Dr. Monro*). Paregoric 4 drachms, sulphuric ether and tincture of tolu of each 2 drachms. ANTIMONIAL COUGH MIXTURE: Antimonial wine 3 drachms, syrup of poppies 12 drachms, water 4 ounces. Dose, a tablespoonful.

MIXTURES, PECTORAL.—1: Syrup of squills, syrup of ipecacuanha, camphorated tincture of opium, of each 1 ounce; mix; dose a teaspoonful for an adult, every three hours; it promotes expectoration and causes relaxation.—2: Syrup of wild cherry bark 3 ounces, syrup of tolu 1 ounce, prussic acid, diluted, 16 drops; mix; dose for an adult, a dessert-spoonful every three hours. Tonic and sedative, useful in consumption.—3: Syrup of gum arabic 4 ounces, muriate of morphia 1 grain, oil of sassafras 1 drop; mix; dose a teaspoonful every three hours. [Similar to *Dr. Jackson's* well-known "Pectoral Syrup."]—4: Powdered extract of liquorice and powdered gum arabic of each 2 drachms, hot water 4 ounces; make a mixture and add spirit of nitrous ether 1 drachm, antimonial wine 2 drachms, tincture of opium 40 drops; mix; a tablespoonful for a dose. [An excellent remedy in the early stages of catarrh; it is the well-known BROWN MIXTURE, or the *Mistura glycyrrhizæ composita* of the U. S. Pharmacopœia.]—5: Decoction of senega 4 ounces, syrup of ipecacuanha 1 ounce, syrup of squills $\frac{1}{2}$ ounce, tartrate of antimony 1 grain; mix; a teaspoonful for children two years of age and over.—6: Gum ammoniac and extract of liquorice of each 2 drachms, vinegar of squills $\frac{1}{2}$ ounce, fennel water $5\frac{1}{2}$ ounces; mix; dose, a teaspoonful for an adult every two hours. [A stimulating expectorant in chronic bronchitis and catarrh.]—7: Muriate of ammonia $\frac{1}{2}$ ounce, powdered gum arabic 2 drachms, powdered extract of liquorice 3 drachms, water $6\frac{1}{2}$ ounces, spirit of nitrous ether $1\frac{1}{2}$ drachms, vinegar of squills 3 drachms; mix; a dessert-spoonful every two hours. [A stimulating expectorant and alterative, and may be given in the advanced stage of bronchial disease.]—8: Copaiba, balsam of tolu, and powdered gum arabic of each $\frac{1}{2}$ ounce, water 6 ounces, aromatic sulphuric acid 20 drops; make a mixture by well rubbing together; dose a tablespoonful; given in chronic catarrh and bronchitis.—9: Hypophosphite of lime 6 drachms, hypophosphite of soda and hypophosphite of potash of each 2 drachms; dissolve, strain, and add hot water 10 ounces, sugar 14 ounces; dis-

solve with a mild heat, strain, and add orange-flower water $\frac{1}{2}$ fluid ounce; mix; dose a teaspoonful every three hours. [The hypophosphites are recommended by Dr. Churchill in phthisis and bronchitic consumption.]

MORFIT'S AMERICAN HAIR TONIC. Strong black tea 2 ounces, boiling water 1 gallon, glycerine 3 ounces, tincture of cantharides $\frac{1}{2}$ ounce, American bay rum 1 quart; digest, and perfume to taste.

MORPHINE. This, the most important of the opium bases, may be obtained by the following (*Gregory's*) process:— Make an aqueous infusion, precipitate by chloride of calcium to remove the meconic and sulphuric acids present. Filter, and evaporate until hydrochlorate of morphine crystallises out so as to form a nearly solid mass, which must be subjected to a strong pressure. The pressed matter is to be crystallised and pressed repeatedly; the colouring matter may, if necessary, be further eliminated by animal charcoal. The hydrochlorate is to be dissolved in water and precipitated by ammonia; pure morphine precipitates.

MOTH POWDER. Take of lupulin (flour of hops) 1 drachm, Scotch snuff 2 drachms, camphor 1 ounce, black pepper 1 ounce, cedar saw dust 4 ounces; mix thoroughly.

MOUTH WASHES. **VIOLET MOUTH WASH:** Tincture of orris 8 ounces, essence of roses 8 ounces, alcohol 8 ounces, essential oil of almonds 5 drops; mix. **COLOGNE MOUTH WASH:** Eau de Cologne 1 quart, tincture of myrrh 4 ounces; mix.

MUCILAGE FOR LABELS. Macerate 5 parts of good glue in 20 parts of water for twenty-four hours, adding 20 parts of rock candy, and 3 parts of gum Arabic.

MUSK, ARTIFICIAL. Mix together very gradually 1 drachm of oil of amber and $\frac{1}{2}$ ounce of nitrous acid, stirring briskly; the mixture will gradually assume the form of a yellow resin, having a strong resemblance in smell to genuine musk.

MUSK, ESSENCE OF. Rub $\frac{1}{2}$ an ounce of pod musk down in a mortar with about twice that weight of sugar; macerate in 4 ounces of boiling water for four and twenty hours, adding 24 ounces of alcohol and 4 drachms of ammonia; digesting the whole in a closely-stoppered bottle for twenty-eight days, frequently shaking, and finally filter through thin blotting paper.

N

NAPHTHALINE. The last portion of the volatile oily product of the distillation of coal tar is collected separately, and allowed to repose, when crude naphthaline separates. By continuing the distillation till the residuum in the still begins to char a further portion of dark-coloured naphthaline is obtained. Purify by repeated sublimation.

NARCOTINE. Exhaust opium of its soluble matter with cold water, afterwards treat it with water acidulated with hydrochloric acid; filter; neutralise with ammonia; wash the precipitate and dissolve in boiling rectified spirits, from which crystals of narcotine become deposited on cooling; these may be further purified by solution in ether.

NITRO-BENZOL. This is prepared from benzol (q: v:) by adding it drop by drop to hot fuming nitric acid; on the addition of water (when the reaction is over) a yellow oil separates itself. This is crude nitro-benzol, it may be purified by washing with a solution of carbonate of soda. It is readily soluble in ether or rectified spirits.

NAPLES YELLOW. Calcine 19 parts of metallic antimony with 8 parts of red lead and 4 parts of oxide of zinc, in a reverberatory furnace. The mixed oxides are to be well rubbed together and fused; after this the fused mass is to be reduced to a very fine powder.

NICOTIANINE. This substance, sometimes called Tobacco Camphor, may be obtained by distilling tobacco leaves with water, and allowing the turbid liquor which passes over to stand for some time, when the nicotianine, a concrete volatile oil, comes to the surface and may be skimmed off.

NITRO-GLUCOSE. This substance is obtained by acting upon finely-powdered grape sugar with nitro-sulphuric acid; a pasty mass is thus formed, which must be well stirred, when lumps separate from the liquid; these lumps are to be now well kneaded in water to remove all trace of acidity, when they acquire a silky lustre, and form nitro-glucose.

NEROLI, ESSENCE OF. Take of oil of orange peel 1 drachm, oil of neroli 40 drops, tincture of ambergris 1 drachm, tincture of orris 5 ounces, rectified spirit 5 ounces.

NINE OILS, LINIMENT OF. The following is the original formula for this old fashioned but still popular liniment:—
Train oil 1 gallon, oil of turpentine 1 quart, oil of amber and oil of bricks (q : v :) of each 5 ounces, oil of spike and oil of origanum of each 2 ounces, Barbadoes tar $2\frac{1}{2}$ pounds, oil of vitrol 2 ounces, camphorated spirit 10 ounces.



ODONTINE. Mix together pulverised cuttle-fish bone 4 parts, butter of cocoa 2 parts, honey 2 parts, otto of roses a sufficiency.

ODONTODYNE (TOOTH-ACHE TINCTURE). Mix together tincture of opium 3 drachms, rectified spirit 5 drachms, camphor 1 drachm, pellitory root in coarse powder $\frac{1}{4}$ ounce, cloves bruised 2 drachms; digest and filter.

OIL OF BELLADONNA (*Paris Codex*). Take of bella donna leaves freshly plucked and bruised 1 part, Florence oil 4 parts; digest with heat, strain, and filter.

OIL OF BRICKS. Linseed oil 1 pound, oil of turpentine 10 ounces, oil of hartshorn and Barbadoes tar of each 1 ounce; mix well together.

OIL OF CAYENNE. Take of capsicum in fine powder 2 ounces, olive oil 10 ounces; digest with heat for several hours and filter. [External stimulant.]

OIL, COD LIVER. The following is the process of manufacturing the far-famed cod-liver oil of Portugal Cove, Newfoundland. On the average it requires $2\frac{1}{2}$ gallons of liver to produce a gallon of oil. The livers are first carefully washed, and must be "cooked" at once, while fresh. They are first put into a large tin boiler. This is plunged into a larger iron boiler filled with hot water, the water not being allowed to touch the livers, which are thus gently steamed till a quantity of oil is floating on the surface. This is dipped out and filtered through blanketing first; then twice afterwards it is filtered through bags of mole-skin. From the last filtration it comes out of a beautiful crystalline transparency, and without any unpleasant smell or taste. The oil is now poured into 60-gallon casks,

and forwarded to the exporting merchant. The refuse is placed under screw presses and the remainder of the oil extracted. This is not refined, but sold as common cod oil, and is used largely on railways and for lubricating machinery. Great attention to cleanliness is also necessary, the filtering bags requiring to be washed thoroughly every day, and the troughs scrubbed out with great care. The rancid oil that is frequently met with is the produce of manufacturers who are careless about these matters. The best oil is made in the way above described; and all the pretences made about refining it, and making it palatable, are either covers for adulteration or such means as deprive the oil of its most valuable therapeutical qualities.

OIL OF EGGS. Heat yolk of egg until it becomes thoroughly dry, press, and digest in boiling alcohol, filter while still hot, and distil off the spirit. [Used for sore nipples chaps, and excorations.]

OIL OF ELDER, GREEN. Boil 8 ounces of elder leaves in 10 ounces of olive oil; when the leaves are exhausted the oil is expressed and again heated. [Popular in some districts as an emollient liniment.]

OIL OF PELLITORY. Prepared from the root of the pellitory (*Anacyclus pyrethrum*).

OIL, PHOSPHORATED (*Magendie*). Take of phosphorus sliced 30 grains, almond oil 1 ounce, macerate in a dark place, with occasional shaking, for fourteen days, decant the clear portion, and add a few drops of oil of bergamot.

OIL OF SULPHUR (**BALSAM OF SULPHUR**). Sublimed sulphur 1 ounce, olive oil 4 ounces; boil together till the mixture assumes a syrupy consistency.

OIL OF WAX. Oil of wax, or as it is sometimes called Butter of Wax, is prepared from yellow bees-wax by rapid distillation in a well closed alembic, and rectification with quick-lime.

OINTMENT OF ACONITINE (*Dr. Garrod*). Made by triturating aconitine with lard in the proportion of 1 grain of aconitine to 1 drachm of lard. Some authorities give the proportions as 1 grain to the ounce. [This is a useful preparation in careful hands, in cases of neuralgic pains.]

OINTMENT, ALKALINE (*Soubeyran*). Carbonate of

soda 2 drachms, wine of opium 1 drachm, lard 1 ounce; mix without heat. [For scorbutic affections.]

OINTMENT, AROMATIC. Lard 40 ounces, yellow wax and oil of laural of each 3 ounces; melt, adding as the ointment cools 2 drachms of each the oils of juniper, mint, lavender, and rosemary.

OINTMENT OF ARSENIC (*Soubeiran*). Mix together lard and spermaceti ointment of each 6 parts, add thereto by careful trituration white arsenic 1 part.

OINTMENT OF ATROPIA. Mix together by careful trituration 10 grains of atropia with 6 drachms of lard, adding 2 or 3 drops of otto of roses. [Esteemed useful in rheumatism.]

OINTMENT OF BROMINE. Bromade of potassium 1 drachm, bromine 25 drops, lard 3 ounces. [Resolvent in bronchocele, &c.]

OINTMENT OF CHARCOAL. Lime-tree charcoal recently burnt and carbonate of soda of each 1 drachm, lard 5 drachms; mix.

OINTMENT OF CHLOROFORM. Chloroform 1 drachm, simple ointment 1 ounce; mix; must be kept well closed from the air.

OINTMENT, CUCUMBER. Take of oil of sweet almonds 7 ounces, spermaceti 18 drachms, white wax 5 drachms, glycerine 1 fluid ounce, green cucumber 4 pounds. Cut the cucumbers down small, mash them in a wedgwood mortar, let them macerate in their own liquor for twelve hours, express and strain; melt the almond oil, spermaceti, and wax together by means of a water bath; add the strained liquor, stirring constantly, so as to incorporate the whole together. Set it aside in a cool place until it becomes hard, then beat with a wood spatula till the watery portion becomes separated from the ointment; pour off the liquor thus obtained, and mix the glycerine with the ointment, without heat, by means of kneading until thoroughly well incorporated. Pour into jars and keep covered with rose-water.

OINTMENT, DIGESTIVE (*Paris Codex*). Mix together the yolks of 2 eggs, with 2 ounces of Venice turpentine, afterwards adding oil of St. John's wort 4 drachms.

OINTMENT, EYE (*Duypytren*). Mix together red oxide of mercury 5 grains, sulphate of zinc 10 grains, with 1 ounce of lard. [For inflammation and ulcers of the lids.]

OINTMENT, EYE (*Thomson*). Mix together pure oxide of zinc 1 drachm, lard 9 drachms, wine of opium 20 drops. [Tonic in cases of chornic ophthalmia.]

OINTMENT, NERVINE (BAUME NERVAL) (*Paris Codex*). Mix together with a gentle heat oil of mace (expressed) and ox marrow of each 2 ounces, adding oil of rosemary 1 drachm, oil of cloves 30 drops, camphor 30 grains, balsam of tolu 1 drachm. The camphor and tolu balsam are to be first dissolved in 2 drachms alcohol.

OINTMENT FOR PILES (*Cooley*). Morphia 8 grains, melted spermaceti ointment 1 ounce; triturate together until solution is complete, then add of galls in impalpable powder $1\frac{1}{2}$ drachm, essential oil of almonds (genuine crude) 12 to 15 drops, and stir till the mass coneretes.

OINTMENT OF ZINC AND CAMPHOR (*Dr. Hardy*). Oxide of zinc 8 parts, camphor 4 parts, prepared lard 30 parts.

ONGUENT DE LA MERE (*Paris Codex*). Mix together black pitch 1 part, butter, lard, litharge, suet, and yellow wax of each 4 parts, olive oil 8 parts. [A useful stimulating ointment.]

OPODELDOC, STEERS. This popular and highly useful liniment is, according to Cooley, prepared in the following manner:—"White Castile soap cut very small 2 pounds, camphor 5 ounces, oil of rosemary 1 ounce, oil of origanum 2 ounces, rectified spirit 1 gallon; mix, and digest in a strong bottle (closely corked) by the heat of a water bath until the solution is complete; when the liquid has considerably cooled, add of liquor of ammonia 11 ounces, and immediately put into wide-mouthed bottles, cork them close and tie over with bladder."

ORANGEADE. Add the expressed juice of 8 oranges and 3 lemons to 8 ounces of simple syrup, and 16 ounces of water; filter, and add 4 ounces of tincture of orange peel.

ORFILIA'S HAIR DYE. See HAIR DYES.

ORIENTAL HAIR DYE. See HAIR DYES.

OXALIC ACID (*Ure*). Digest together over a water

bath 4 parts of nitric acid of the sp. gr. 1.4, and 1 part of good brown sugar; as soon as the fumes cease to arise remove the heat, and set the acid aside to crystallize. By the above process 1 cwt. of sugar and 480 pounds by weight of nitric acid, should produce about 140 pounds of oxalic acid; the addition of a small portion of sulphuric acid is said to increase the product. A chemically pure oxalic acid for testing purposes may be obtained by precipitating a solution of binoxalate of potash with a solution of acetate of lead, washing with distilled water, decomposing with dilute sulphuric acid, and evaporating to form crystals.

P

PAPIER FAYARD (GOUT PAPER). Make a tincture of powdered euphorbium 1 part, powdered cantharides 2 parts, in 8 parts of alcohol and 3 parts of ether; strain, and add Venice turpentine 1 part; into this dip thin sheets of white paper. Dry in a cool airy place.

PAPER, WAXED. A useful paper for covering gallipots and the corks of bottles may be made by placing sheets of stout wove writing paper on a hot slab of stone or metal, and rubbing evenly over the surface a piece of white wax.

PARIS BLUE. See ANILINE.

PASTE, TOOTHACHE. Mix together opium and extract of henbane of each 10 grains, pelltitory and belladonna extract of each 20 grains (all the above must be in a state of fine powder), oil of cloves 10 drops.

PASTE, CANQUOINS'. Chloride of zinc 8 parts, oxide of zinc 1 part, flour (dried at 212° Fahr.) 7 parts, cold water 1 part; mix the oxide and the flour, dissolve the chloride of zinc in the water, and rub them all together in a mortar.

PASTILLES OF ORANGE FLOWER. Mix together oil of neroli 1 drachm, nitre powdered 2 drachms, gum galbanum in fine powder 13 drachms, gum storax in powder 11 drachms, charcoal 10 ounces; triturate well together and make into a paste with a solution of 2 drachms of gum tragacanth in rose water and orange flower, of each 2 ounces.

PASTILLE PAPER. Olibanum 12 drachms, storax 8 drachms, benzoin 6 drachms, balsam of Peru 4 drachms, balsam of tolu 3 drachms, rectified spirits of wine 10 ounces; macerate for twenty-eight days and add of a saturated solution of potassium nitrate 1 ounce; soak sheets of thick unsized paper in the solution and dry in a current of cold air.

PASTILLES, FUMIGATING. Take of gum benzoin in powder 16 parts, balsam of tolu and powdered sandal wood of each $\frac{4}{5}$ parts, charcoal 48 parts, powdered tragacanth and labdanum of each 1 part, powdered nitre and gum arabic of each 2 parts, cinnamon water 12 parts; reduce all to a fine powder, and beat into a mass with cold water, mould into small cones and dry without heat.

PASTILLES FUMANTES, AROMATIC PASTILLES, FUMIGATING PASTILLES (*Paris Codex*). Mix together in a solution of gum tragacanth, gum benzoin 2 ounces, balsam of tolu and sandal wood powdered of each 4 drachms, nitre 2 drachms, labdanum 1 drachm, charcoal 6 ounces; form into small cones and dry in the air.

PATCHOULI (ESSENCE OF). Take of patchouli 4 ounces, rectified spirits 1 pint, water 5 ounces; digest for fourteen days and filter, adding lavender water 1 ounce, tincture of musk 10 drops.

PATE D'ALMANDE AU MEL. Rub together 1 pound of honey and the yolks of eight eggs, add gradually with constant stirring 1 pint of almond oil, and 8 ounces of bitter almonds in powder. Perfume with oil of bergamot and cloves of each 3 drachms.

PATE DE JUJUBES (JUJUBE PASTE). Jujube fruit (*Zizyphus vulgaris*) 1 pound, water 4 pounds; boil the fruit in the water for half an hour; strain, press, and decant the clear portion, which clarify with white of egg; add of clear solution of 6 pounds, gum arabic in 8 pounds of water, white sugar 5 pounds; evaporate gently to the thickness of jelly, pouring in 6 ounces of orange flower water; place in a water bath for twelve hours, bring up the temperature to 212° Fahr., carefully removing the scum; pour into tin moulds and dry with a heat of about 104°.

PEARL POWDER. Oxide of bismuth precipitated 1 ounce, oxide of zinc (Hubbuck's) 1 ounce, prepared chalk 1 pound. A little perfume may be added.

PEAR OIL. The artificial flavouring essence sold under this name is simply a solution of acetate of amyle (q.v.) in alcohol.

PEARL POWDER. Pearl white and French chalk reduced to an impalpable powder and triturated together.

PEARL WHITE. See BISMUTH, SUBNITRATE OF.

PEPSINE AND COPAIBA CAPSULES (*Ricord*). Take of balsam of copaiba 250 parts, pepsine 60 parts, nitrate of bismuth 12 parts, calcined magnesia 18 parts. Divide into 600 capsules.

PEPSINE. Take the rennets of a newly-killed calf, sheep, or pig, wash under a stream of water, carefully scrape the internal membranes, and macerate in water for two hours at a temperature of about 60° Fahr., then strain through a coarse cloth. The pepsine in the solution is now precipitated by acetate of lead, and the liquid carefully poured off; a current of sulphurated hydrogen is now passed through the semi-liquid deposit; this precipitates the lead, leaving a solution of pure pepsine, which filter and evaporate to dryness at a uniform temperature of 130° Fahr.

PEPSINE, ELIXIR OF (COMPOUND). Elixir of Garus (q.v.) 150 parts, syrup of cherries 300 parts, pepsine 30 parts; triturate the pepsine with the elixir, macerate for half an hour in a covered vessel, and filter through paper previously moistened. Dose: a tablespoonful.

PEPSINE, ELIXIR OF (*Corvisart*). Take of elixir of Garus 150 parts, starchy pepsine 10 parts; prepare as above directed.

PEPSINE, ELIXIR OF (*Maithe*). Take of pepsine 6 parts, distilled water 24 parts, white wine 54 parts, sugar 30 parts, proof spirit 30 parts. Macerate until the sugar is entirely dissolved, and filter. This agreeable preparation is very popular in French pharmacy. Dose: 1 tablespoonful.

PEPSINE, EXTRACT OF. Dr. Von Wittiek has by a series of careful experiments proved the value of glycerine as an agent for the extraction and preservation of this delicate remedy. The mode of procedure is as follows: Wash carefully the mucous membrane of the pig's stomach, and remove the water adhering by means of an absorbent cloth, mince fine, cover with glycerine; after twenty-four hours repose, express and filter.

PEPSINE AND IODIDE OF IRON PILLS. Take of pepsine 10 parts, iodide of iron in crystals 5 parts, simple syrup a sufficiency. Divide into 100 pills, coat with reduced iron, finish with sugar coating.

PEPSINE, LIQUID (*Scheffer*). 6 pounds of finely-chopped mucus membrane of fresh well-cleaned hogs' stomach are macerated in a mixture of 4 pounds of glycerine, 4 pints of water, 6 ounces of pure hydrochloric acid; after standing for thirty hours the mass is strained, the membrane macerated again with 3 pints of water for two or three hours and strained, repeating the process with smaller portions of water till the whole measures 10 pints; from this a precipitate of mucus will form on standing, which when filtered gives a clear straw-coloured liquid. One fluid ounce of the liquid pepsine equals in strength 100 grains of the French preparation.

PEPSINE PILLS (*Hogg*). Take of pepsine 10 parts, nitrate of bismuth 5 parts, lactic acid $2\frac{1}{2}$ parts; mix, and divide into 100 pills; finish with a sugar coating. Dose: four pills at each meal.

PEPSINE PILLS (*Boudault*). Take of pepsine 10 parts, powdered gum tragacanth a sufficiency; make into 60 pills. Dose: 3 pills before each meal.

PEPSINE SYRUP (*Corvisart*). Take of syrup of cherries 51 parts, pepsine 10 parts; heat the syrup to 72° Fah.; Mix in the pepsine, leave in contact for an hour, and filter.

PEPSINE WINE. Take of pepsine 10 parts, white wine 200 parts; macerate and filter.

PERU, OIL OF. Shake together some balsam of Peru and strong caustic potash, on adding water and digesting with heat an oily body separates itself, wash this with water, and afterwards dissolve in spirit; on diluting this solution a resin separates, this is cast aside, and alternate solution in water and alcohol continued till all the resin is separated from the oil, and the alcohol is finally driven off by heat, leaving the colourless and slightly odorous oil of Peru behind.

PHENIC VINEGAR. Take of acetic acid 900 parts, camphor, in powder, 5 parts, phenic acid, in crystals, 100 parts. [This is a most valuable disinfectant.]

PHENIC DISINFECTANT. The following is being intro-

duced to public notice under the name of "Dubarth's Disinfectant." Powdered brick 5 kilogrammes, carbolic acid 250 grains. Dissolve the acid in a sufficient quantity of alcohol and then mix. A thin layer of this powder spread upon a plate, frequently stirred and slightly damped, produces at the ordinary temperature a much larger quantity of antimiasmatic vapours than would be given off by any solution of carbolic acid. It is superior to the solutions of permanganate of potash, its effects being more constant and more certain.

PHENAMINE. See ANILINE VIOLET.

PHOSPHORATED HYDROGEN GAS (*Schwartz*). The pulverulent metallic zinc which is deposited in the tubes of zinc melting furnaces, is mixed with amorphous phosphorus in powder in the proportion of 1 part of zinc to 2 of phosphorus; introduced into a glass combustion tube, and heated gently, a current of cool air being passed through the mixture; from this process phosphide of zinc results, from which phosphorated hydrogen, when required for the purposes of the laboratory, can readily be prepared by the addition of dilute sulphuric acid.

PHOSPHORUS PASTE (FOR KILLING VERMIN). Take of phosphorus 8 parts, liquefy it in 180 parts of lukewarm water; pour the whole into a mortar, add immediately 180 parts of rye meal; when cool mix therewith a 100 parts of melted butter, and 125 parts of sugar. [This paste will keep its potency for many years intact.]

PHYSOSTIGM, EXTRACT OF (EXTRACT OF CALABAR BEAN). Only beans with a white kernel should be used in the preparation of this extract, these, carefully selected, are to be pounded in a mortar, and over them poured spirits of about sp. gr. 0.83; digest for ten days, when a fine red coloured extract is obtained; filter and wash repeatedly with a little spirit.

PHOSPHORUS PILLS (*Radcliffe*). Take of phosphorus 6 grains, suet 600 grains; melt the suet in a stoppered bottle capable of holding twice the quantity; put in the phosphorus and, when liquid, agitate the mixture until it becomes solid; roll into pills weighing each three grains; finish with gelatine coating.

PICCALILLI (INDIAN PICKLE). Take 1 hard white cabbage sliced, 2 cauliflowers pulled to pieces, a handful of

French beans, 1 stick of horse-radish sliced, 24 small white onions, 12 gherkins; cover with boiling brine; after 24 hours' repose drain on a sieve, put into a jar, and add of curry powder 2 ounces, garlic, ginger, and mustard-seed of each 1 ounce, capsicum $\frac{1}{2}$ ounce; fill up the vessel with hot pickling vinegar and let it stand for several weeks.

PICK ME UP. Cardamoms 5 parts, carraways 2 parts, cochineal 2 parts, cinnamon 10 parts, raisins 80 parts, orange peel 56 parts, ginger 14 parts, gentian root 3 parts, wormwood 2 parts, quassia 1 part, alcohol ('838) 750 parts, water 750 parts; macerate for fourteen days and filter, adding afterwards simple syrup 200 parts.

PILES, POWDERS FOR. No. 1, External: Galls in very fine powder 2 ounces, opium in powder 1 drachm. No. 2, Internal: Milk of sulphur 3 ounces, cream of tartar and black pepper of each 1 ounce, oil of cubeb 35 drops. Dose a teaspoonful.

PICROTOXIN. This, the active principle of *Cocculus, indicus*, may be procured by making an alcoholic extract of the fruit, exhausting the residuum with water, mixing the filtered products, adding thereto hydrochloric acid; when crystals of picrotoxin will gradually form themselves.

PILLS, KEYSER'S SYPHILITIC. Red oxide of mercury $1\frac{1}{2}$ ounce, dilute acetic acid 1 pint; dissolve, and add manna 2 pounds; triturate thoroughly before the fire, and make into $1\frac{1}{2}$ grain pills.

PILLS, STARKEY'S DIAPHORETIC. The following has been published as the original formula:—Extract of opium 4 ounces, mineral bezoar and nutmeg of each 2 ounces, saffron and Virginian snake root of each 1 ounce, soap $\frac{1}{2}$ pound, oil of sassafras $\frac{1}{2}$ ounce, tincture of antimony 2 ounces.

PILLS OF VERATRINE (*Magendie*). Veratrine $\frac{1}{2}$ grain, powdered gum arabic and syrup sufficient to make 6 pills. [A decidedly dangerous preparation.]

PILLS, KAYE'S WORSDELL'S. The composition of these pills as given by Cooley is "powdered aloes, gamboge, and ginger equal parts, together with a small quantity of diaphoretic antimony beaten into a mass with either syrup or treacle, and divided into $2\frac{1}{2}$ -grain pills.

PILLS, ANDERSON'S SCOTT'S. The following is stated to be the original formula for these still celebrated pills :— Take of aloes (socotrine) 1 ounce, finest gum myrrh picked 2 drachms, saffron 1 drachm, all in fine powder; mix with a spoonful of water, and the same quantity of sweet oil, by the heat of a slow fire; form the mass into pills.

PILLS, STAHL'S APERIENT. Aloes in fine powder 1 ounce, compound extract of coloeynth 4 drachms, iron filings 2 drachms, mucilage a sufficiency.

PILLS, ANTILITHIC. Carbonate of soda 1 drachm, Castile soap 90 grains, oil of juniper 12 drops, syrup of ginger a sufficiency to make into 30 pills.

PILLS, BLAND'S FEMALE TONIC. Take of sulphate of protoxide of iron 2 parts (reduced to powder, and dried at a temperature of about 104° Fahr.), carbonate of potassa (effloresced) 2 parts, honey 1 part; make into 50 pills. Dose 1 to 2 every three hours.

PILLS (COATING FOR). Prepare a solution of 1 part of resin in 10 parts of ether. The pills to be coated are rapidly rolled in the solution for about a minute; they are then to be thrown out on a pill tray and slightly dusted over with liquorice powder.

PILLS (SUGAR COATING FOR). Take the white of an egg, and in an evaporating dish beat it with as much finely-powdered white sugar as will make a thick paste, place it in a water bath and evaporate to dryness with constant stirring; pulverise. When pills are to be coated they must first be rolled in a mortar in an ethereal solution of balsam of tolu; transfer the pills from the mortar to a tray made of a sheet of thick clean paper; shake continually till dry; then to a small quantity of the saccharated albumen add a few drops of water, beating it into a thick paste. Into this mass the pills are stirred, and when moistened on all sides, poured quickly into a wooden cylinder previously half-filled with the finest powdered sugar; they are now rolled in the cylinder till thoroughly coated, and afterwards dried by the aid of a gentle heat.

PILLS (TO VARNISH). Take of ether 100 parts, balsam of tolu 10 parts, colophonium 1 part, absolute alcohol 10 parts; digest the balsam in hot water and dry; dissolve in the spirit. To coat the pills place them in a flask, and adding sufficient varnish, quickly shake with rotatory motion, turn

on to a coarse silk sieve, and continue the rotatory motion till dry.

PILLS OF COPAIBA. Balsam 2 ounces, magnesia recently prepared 1 drachm. Mix and set aside to concrete, and divide into 200 pills.

PILLS, TURNBULL'S DELPHINE. Take of delphine 1 grain, extracts of henbane and liquorice of each 12 grains; make into 12 pills. One a dose in gout, rheumatism, &c.

PILLS, DINNER (LADY HESKETH'S PILLS). Socotrine aloes in powder 6 drachms, powdered mastic and petals of the red rose of each 2 drachms, syrup a sufficiency to make a proper mass; make into pills of 3 grains each.

PILLS OF CAFFEINE. Caffeine $\frac{1}{2}$ drachm, aloes 40 grains; conserve of hips sufficient to make into 24 pills.

PILLS OF SANTAL WOOD OIL (A. E. Ebert). Take of oil of santal wood and yellow wax of each $\frac{1}{2}$ a troy ounce; melt the wax in a capsule and weigh into it the oil of santal wood, mix and stir until cold, roll out the mass, and divide it into 80 pills in the same manner as an ordinary pill mass.

PISTACHIO NUT MILK. This elegant preparation for improving the complexion is made by the admixture of the following ingredients into a homogeneous emulsion:—Take of Spanish pistachio nuts 4 ounces, violet water $3\frac{1}{2}$ pints, spirit of neroli 15 ounces, palm soap, Florence oil, and spermaceti of each 1 ounce.

PLASTER, BROWN. See **ONGUENT DE LA MERE.**

PLASTER, CORN. Melt with gentle heat galbanum 2 ounces, add sal ammoniac and saffron $\frac{1}{2}$ ounce of each, powdered camphor 2 ounces; when nearly cold stir in 2 ounces liquor of ammonia.

PLASTERS, COURT (Deschamps). Stretch upon a flat board sheets of muslin, silk or linen, apply to these a thin coating of strained flour paste, and when dry two coats of a strong colourless solution of gelatine, warm, are applied in succession.

PODOPHYLLIN. This is prepared by boiling the root of *Podophyllum peltatum* with lime, and precipitating the lime from the filtered decoction with the double sulphate of iron and zinc; evaporate the filtrate to the consistency of syrup, which treat with alcohol, and filter again; evaporate the

alcoholic solution, and redissolve in boiling water; on cooling, a deposit of podophyllin will be obtained.

POLISHING POWDER (*Lord Rosse's*). Precipitate peroxide of iron with water of ammonia from a dilute solution of sulphate of iron, wash the precipitate and press dry in a screw press, afterwards exposing it to a dull red heat. The important points in this process are that the ammonia be in excess, that the heat be not too great, and that the sulphate of iron employed be pure.

POMADE DE BEAUTE. White wax $1\frac{1}{2}$ drachm, spermaceti 2 drachms, almond oil $\frac{1}{2}$ ounce, olive oil $\frac{1}{2}$ ounce, tincture of Peru 1 drachm; melt and mix in a water bath.

POMADE DE HEBE. Narbonne honey 2 ounces, white wax 1 ounce, tincture of benzoin 3 drachms, melt the wax and mix with a gentle heat.

POMADE DE NINON. Almond oil 4 ounces, lard (benzoated) 3 ounces, juice of house leek 3 ounces; mix with a gentle heat.

POMADE DIVINE. Beef marrow purified $1\frac{1}{2}$ pound, gum storax 4 ounces, gum benzoin 4 ounces, Chio turpentine 4 ounces, orris powder, cinnamon, cloves and nutmeg 1 ounce of each; place in a well tinned vessel over a water bath, keep at boiling point for three hours and strain.

POMATUM, CASTOR OIL AND GLYCERINE. White wax $1\frac{1}{2}$ ounce, glycerine 2 ounces, castor oil 12 ounces, essence of lemons 5 drachms, essence of bergamot 2 drachms, oil of lavender 1 drachm, oil of cloves 10 drops, annatto 10 grains, rectified spirit and distilled water of each a sufficiency. Dissolve the wax with a small portion of the castor oil by the aid of a gentle heat, and rub in the remaining ingredients, allowing the pomatum to cool previous to adding the volatile oils.

POTASH, CITRATE OF. This salt may be procured by neutralising citric acid with carbonate of potash.

POT-POURRI. Cinnamon, cloves, and mace, of each (in fine powder) 4 drachms, powdered orris 4 ounces, essence of lemon, essence of verbena, essence of bergamot, and oil of lavender of each 40 drops; intimately mix.

POWDERS, ANTIMONIAL (*Tyson*). No. 1: Oxide of antimony 2 grains, phosphate of lime 18 grains; mix for powder. No. 2: Oxide of antimony 2 grains, sulphate of

potassa and phosphate of lime of each 9 grains; mix for powder.

POWDER, BAKING. Tartaric acid $\frac{1}{2}$ pound, bicarbonate of soda 12 ounces, starch 12 ounces; dry each thoroughly previous to admixture, which is effected by passing through a fine sieve repeatedly; pack the powder down tightly, to prevent the absorption of moisture.

POWDER, EFFERVESCING GINGER (GINGER BEER POWDERS.) Powdered ginger 2 drachms, bicarbonate of soda 10 drachms, white sugar 4 ounces, essence of lemons 10 drops; make into 12 powders, which fold in blue papers, each of which is to be accompanied by a white paper containing 30 grains of tartaric acid.

POWDER, GREGORY'S. An improved form of the *Pulvis rhei compositus*: Take of calcined magnesia 8 ounces, rhubarb 3 ounces, chamomile 2 ounces, ginger 1 ounce, all in fine powder. The chamomile is sometimes omitted.

POWDER, HAND (COSMETIC POWDER). Almond powder 1 pound, powdered cuttle fish bone and white soap, of each 4 ounces, orris powder 1 ounce; mix.

POWDER, LEMONADE. Lump sugar in fine powder 8 ounces, bicarbonate of soda 2 ounces, essential oil of lemons 45 drops; divide into 36 powders, which fold in blue papers, each packet to be accompanied by a white paper containing 40 grains of tartaric acid.

POWDER, NURSERY. Powdered starch 7 pounds, orris root powdered 4 ounces, oil of bergamot 2 drachms.

POWDER FOR SACHETS. Orris root in fine powder 2 ounces, cassia $1\frac{1}{2}$ ounce, cloves 1 ounce, sandal wood $\frac{1}{4}$ ounce, oils of lavender and bergamot of each 1 drachm, musk and ambergris of each 6 grains; the last two ingredients had better be rubbed down with a little fine white sand.

POWDERS, SPRUCE BEER. Proceed as for ginger beer powders, only substituting 3 to 6 drops of essence of spruce for the powdered ginger.

POWDER, TOOTH. See DENTIFRICE.

POWDER FOR WARTS (CORN POWDER). Ivy leaves ground to a powder is sometimes sold under these names.

POWDERS, WORM (*Dr. Collier*). Take of virgin scammony and jalap (in powder) of each 1 drachm, cream of

tartar 2 drachms, Ethiops mineral 3 drachms; make into powders.

PRESERVED MILK. To every $1\frac{3}{4}$ pint of new milk add 10 drachms of bicarbonate of soda or potash; bottle close and place in a water bath for four hours at a temperature of about 190° Fahr. When the bottles are removed from the bath they are to be dipped in melted pitch.

PROPYLAMINE. This base may be obtained by acting upon iodide of propyl with ammonia.

PROPYLENE. This name is given to an hydro-carbon obtained from glycerine and also from propylic alcohol by the action of anhydrating agents.

PURPLE OF CASSIUS (*Buisson*). Dissolve 1 gramme of pure grain tin in a sufficiency of muriatic acid, taking care that the solution is neutral; next 2 grammes of tin in aqua-regia, composed of the parts of nitric acid and 1 part of muriatic acid, so that the solution can contain no protoxide; lastly 7 grammes of fine gold in a mixture of one part of nitric acid and 6 parts of muriatic acid, observing to make the solution neutral. This solution of gold being diluted with 3 quarts of water, the solution of perchloride of tin is to be added at once, and afterwards that of the protochloride, drop by drop, till the resulting precipitate acquires the desired tint; the precipitate must now be well and thoroughly washed.

PYROPHOSPHATE OF IRON AND SODA. A solution of 6 parts of pyrophosphate of soda in 100 parts of water is mixed with another solution containing 13 parts of liquid perchloride of iron of 1.44 sp. gr., and 78 parts of water. The precipitate is washed and then dissolved in a warm solution of 4 parts of anhydrous pyrophosphate of soda in 36 parts of water. The liquor is evaporated till a pellicle forms, and allowed to crystallise. The crystals are now to be dried at the ordinary temperature; or the concentrated solution may be precipitated by the addition of four times its volume of strong alcohol; a translucent white precipitate is obtained.

PYROTECHNIC MIXTURE (JAPANESE). Finely pulverised nitrate of potassa 70 parts, washed flowers of sulphur 30 parts, powdered lycopodium 12 parts, best and very light lamp-black 8 parts. From $1\frac{1}{2}$ to 2 grains of this powder are sufficient for use, packed in strips of suitable paper.

PYROTECHNIC MIXTURES (*Harder*). WHITE LIGHT: saltpetre 8 parts, sulphur 2 parts, antimony 2 parts. RED LIGHT: nitrate of strontia 20 parts, chlorate of potash 5 parts, sulphur $6\frac{1}{2}$ parts, charcoal 1 part. BLUE LIGHT: chlorate of potash 9 parts, sulphur 3 parts, carbonate of copper 3 parts. YELLOW LIGHT: nitrate of soda 24 parts, antimony 8 parts, sulphur 6 parts, charcoal 1 part. GREEN LIGHT: nitrate of baryta 20 parts, chlorate of potash 18 parts, sulphur 10 parts. VIOLET LIGHT: nitrate of strontia 4 parts, chlorate of potash 9 parts, sulphur 5 parts, carbonate of copper 1 part, calomel 1 part.

PYROTECHNIC STARS (*Harder*). WHITE STARS: saltpetre 9 parts, sulphur 3 parts, antimony 2 parts. RED STARS: nitrate of strontia 20 parts, chlorate of potash 12 parts, sulphur 11 parts, charcoal 2 parts, antimony 2 parts, mastic 1 part. BLUE STARS: chlorate of potash 20 parts, carbonate of copper 14 parts, sulphur 12 parts, mastic 1 part. YELLOW STARS: chlorate of potash 20 parts, bicarbonate of soda 10 parts, sulphur 5 parts, mastic 1 part. GREEN STARS: nitrate of baryta 12 parts, chlorate of potash 28 parts, sulphur 15 parts, mastic 1 part. VIOLET STARS: chlorate of potash 9 parts, nitrate of strontia 4 parts, sulphur 6 parts, carbonate of copper 1 part, calomel 1 part, mastic 1 part.

PYROXYLINE, PHOTOGRAPHIC. Take of nitric acid 3 fluid ounces, sulphuric acid 3 fluid ounces, best carded cotton a sufficiency. The cotton wool should be pulled into light flat tufts, and spread ready for immersion. The acids are to be mixed in a jar standing in a deep dish of hot water; when the temperature of the acids is at 150° Fah., the cotton is to be immersed rapidly, a tuft at a time, each piece being pressed down in the solvent with a glass rod. The mass of cotton, at the end of ten minutes, is to be lifted by means of glass rods and plunged into cold water; stir the cotton through the water (which must be changed repeatedly) for a few hours, wring out, and separate the mass into light tufts for drying. It will be found to dissolve in the proportion of 5 grains to the ounce of a mixture of equal parts of ether and alcohol.

Q

QUASS. This acidulous liquor, which is much used in Russia for dietetic purposes, is prepared from rye flour, on which hot water is poured, and the mixture placed in a warm place till it becomes sufficiently acid.

QUASSINA. Precipitate a decoction of quassia with milk of lime, evaporate the filtrate; dissolve the residue in alcohol, purify with animal charcoal; again evaporate; dissolve in water. From this solution the bitter principle quassina may be obtained in crystals.

QUEEN'S OWN BOUQUET. Take of oil of lavender 2 drachms, oil of cloves 2 drachms, oil of bergamot 2 drachms, oil of cassia 30 drops, tincture of musk 1 drachm, rectified spirit 5 ounces.

QUININE. In manufacturing this salt upon a large scale it is usual to digest the chinchona bark, reduced to the condition of a coarse powder, in a dilute solution of sulphuric acid for about two hours; the liquor is drawn off and the process repeated with a weaker solution of acid; the two liquors are mixed and strained, and to them are added lime or magnesia till the whole gives a slightly alkaline indication to a slip of litmus paper. A dark-coloured precipitate is formed, which contains the alkaloids, with some colouring matter and lime. This precipitate is strained and treated with boiling alcohol, which dissolves the alkaloids and colouring matter; the solution filtered and the alcohol removed by distillation leaves a brown mass, which is treated with dilute sulphuric acid till the solution shows a slightly acid reaction. After being digested with animal charcoal to remove the colouring matter, the solution is filtered and evaporated, and as it cools the sulphate of quinine crystallises out.

QUININE, CHLORATE OF (*Tichborne*). 310 grains of chlorate of barium are dissolved in a small quantity of boiling water; 2 ounces of sulphate of quinine are mixed with about 12 ounces of water at a temperature of about 190° Fahr. in a porcelain dish; mix the solutions, when a double decompo-

sition will ensue. There must be a slight excess of the sulphate to ensure precipitation of the barium. The dish is now transferred to a lamp and precipitated carbonate of barium added with stirring until all trace of sulphur is decomposed. Evaporate and dry the crystals at a gentle heat.

QUININE, IODIDE OF (*Parrish*). Dissolve in alcohol sulphate of quinine (effloresced) 5 parts; decompose this solution by addition of 3 parts of iodide of potassium, also dissolved in alcohol; sulphate of potassa is precipitated, and the quinine iodide is obtained in fine crystals on evaporating the solution.

QUININE AND COD-LIVER OIL. These two valuable medicines may be intimately united by dissolving quinine (pure, and recently precipitated) in a little anhydrous ether, and mixing with the oil with agitation. The most suitable proportions are 40 grains of quinine to the pint of oil.

QUININE PILLS (*Dr. Atkinson*). Add to the sulphate of quinine a small quantity of tartaric acid, and after incorporating the two in a glass, add a very small quantity of syrup. The mass at once assumes a soft consistency, and admits of its being rolled and treated with drying powder. The following is *Dr. Atkinson's* formula:—Take of sulphate of quinine 1 scruple, tartaric acid 4 grains, syrup 1 or 2 drops; triturate the quinine with the tartaric acid until they are thoroughly mixed, then add the syrup.

R

RAZOR-STROP PAPER. This is simply a strong blotting paper charged while damp with a mixture of jewellers' rouge and emery in a finely powdered state, and intimately mixed. The paper when dry is cut into small squares, and used to wipe the razor on in lieu of stropping.

RHODIUM, SPIRIT OF. Take of rhodium chips 4 ounces, rectified spirit 1 pint; macerate for 28 days and filter.

ROCHE'S EMBROCATION. See EMBROCATION.

RONDELETIA, ESSENCE OF. Take of oil of lavender 6 drachms, oil of cloves $2\frac{1}{2}$ drachms, oil of bergamot 2

drachms, essence of musk 30 drops, essence of ambergris 30 drops, alcohol 30 ounces.

ROPOPHAGON, (SHAVING SOAP). Hard soap in small shavings 2 ounces, best soft soap 6 ounces; melt by the aid of a water bath; add on cooling oil of cloves 1 drachm, tincture of ambergris 20 drops.

ROSE HONEY. See HONEY.

ROSE OIL. The following is an economical and good hair oil. Olive oil (coloured with alkanet) 1 pint, oil of rosemary 40 drops, oil of thyme 40 drops, oil of nutmeg 40 drops.

ROSE POMADE. Benzoated lard 1 pound, suet strained 2 ounces, oil of geranium 6 drops, otto of roses 6 drops; mix. [May be coloured with alkanet or liquid carmine.]

ROSE WATER. Dissolve 3 drachms of otto of roses in 1 pint of (warm) rectified spirit, and when dissolved add of warm water 10 gallons; agitate till cold; distil off 8 gallons.

ROUGE, JEWELLERS. A rouge eminently fitted for fine work may be made by decomposing a solution of sulphate of iron with oxalic acid also in solution, a precipitate of oxalate of iron falls, which must be well washed and dried; when gently heated the salt takes fire, leaving an impalpable powder of oxide of iron. See also POLISHING POWDER.

ROUGE, TOILET (FRENCH). Wash safflowers until the water is no longer coloured, dry and pulverise, digest in a dilute solution of carbonate of soda (crystals); place a layer of cotton wool at the bottom of a wide-mouthed glass vessel, on this pour the previously filtered solution, this precipitate by the addition of fresh lemon juice; wash out the cotton with distilled water, and dissolve out the colouring matter with a fresh solution of soda; to the new solution add a quantity of finely powdered French chalk, mixing well; precipitate with lemon juice, collect and dry the precipitate, triturate with a few drops of oil of cloves.

ROYAL POMATUM COSMETIQUE. Beef suet 1 pound, bees wax $2\frac{1}{2}$ pounds, gum benzoin (powdered) 1 drachm, melt, and add oil of lemon 1 drachm, oil of cassia $\frac{1}{2}$ drachm. This may be coloured black by adding 5 ounces of ivory black. Brown and auburn tints may be got by the addition of burnt umber and annato.

S

SACHET. See POWDER FOR SACHET.

SALT OF LEMONS. Equal parts of binoxalate of potash and cream of tartar.

SALTS, SMELLING (AROMATIC SALTS). Carbonate of ammonia 1 pound, oil of lavender 2 ounces, oils of bergamot and lemon of each 1 ounce; mix well together.

SALTS, VOLATILE, SMELLING SALTS, PRESTON SALTS. In the preparation of smelling salts, the carbonate and not the sesquicarbonate of ammonia should be employed, as in the following formula:—Carbonate of ammonia 8 ounces, oil of bergamot 1 ounce, oil of verbena 2 drachms, otto of roses 30 drops; triturate the ingredients well together; sublime, and store in tightly-stoppered bottles. A Preston salt may be made extemporaneously by triturating together 2 drachms of hydrochlorate of ammonia, and 6 drachms of pure potassa, and afterwards adding oil of bergamot $\frac{1}{2}$ drachm, oil of cloves 10 drops.

SANTONIN. Take of wormseed 4 parts, hydrate of lime $1\frac{1}{2}$ part; mix, and exhaust with alcohol; distil over three-fourths, and evaporate residuum to one half; mix at 212° Fahr., with acetic acid in excess, and afterwards with water; from this santonin in an impure state gradually subsides; it must now be washed in dilute alcohol, and afterwards dissolved in 10 times its weight of alcohol, discharge the colour with animal charcoal, and filter, from the purified solution the crystals of santonin are obtained, these dry and place in opaque stoppered bottles.

SAVONETTES (SOAP BALLS). These are usually made of one or other of the toilette soaps with the addition of a little starch, sometimes sand is used in place of the starch. CAMPHOR SAVONETTE: Spermaceti 2 ounces, camphor powdered with the addition of a little spirits 1 ounce, white curd soap (melted with a little water) 24 ounces; amalgamate with a gentle heat and mould into balls. SAND SAVONETTE: Fine old yellow soap 2 parts, silver sand 1 part, scent to taste; melt the soap and mix in the sand, afterwards adding the scent and making into balls.

SAVONETTE, VIOLET. Palm oil 4 pounds, starch 2 pounds, orris root in fine powder 1 pound, scent to taste, and proceed as in foregoing.

SEDATIVE DRAUGHT OF CHLORAL HYDRATE. Chloral hydrate 2 parts, orange syrup 50 parts, mucilage of gum arabic 50 parts, distilled water 120 parts; mix. Dose, a dessert spoonful every hour.

SEGARS, CARBOLICIZED. The following is the method proposed by M. Rolle for making carbolicized segars:—Powdered plaster 100 parts, carbolic acid 20 parts; dissolve the carbolic acid with a sufficient quantity of alcohol, and sprinkle with this solution the granulated plaster. Stir with a spatula in order to secure an equal distribution of the active substance, then introduce the granules into the hollow portion of a quill, of which the ends are closed with a little wadding, as is done in the case of camphor cigarettes.

SELTZER WATER (ARTIFICIAL). Take of muriate of lime and muriate of magnesia of each 4 grains; dissolve these in a small quantity of water, and add to it a similar solution of 8 grains of bicarbonate of soda, 20 grains of muriate of soda, and 2 grains of sulphate of soda; mix, and add a solution of $\frac{1}{4}$ of a grain of sulphate of iron; put the mixed solution into a 20-ounce aerated water bottle, and fill in the usual way with aerated water.

SHEEP DIPPING BATHS (*Bain de Tessier*). Take of powdered arsenious acid 2 pounds, water 60 gallons, sulphate of iron 200 pounds; boil until reduced to one third, and again make up the measure by the addition of water. BATH FOR SCAB: Take of powdered arsenious acid 4 pounds, powdered sulphate of iron 40 pounds, powdered black oxide of iron 24 ounces, powdered gentian root 12 ounces: rub down in a mortar, and when required for use dissolve the mixture in ten times its weight of water. The proportions above quoted are sufficient for 200 sheep.

SHERBET. Citric acid 90 grains, essence of lemons 10 drops, sugar 2 ounces; when required for use dissolve in 1 pint of water. See also KALI, ACIDULATED.

SIROP D'OPIUM (*Syrupus cum Extracto Opii, Paris Codex*). Take of extract of opium 2 parts, distilled water 8 parts, simple syrup 990 parts; dissolve the extract of opium in cold distilled water, filter, and mix with the syrup.

SOAP, ALMOND. Take of hard white soap 28 pounds, essential oil of almonds $4\frac{1}{2}$ ounces; reduce the soap to small shavings, and melt with the aid of a little hot water, adding gradually, and with constant stirring, the essence; mould into eakes of an oval form.

SOAP, ANTIMONIAL. This medicated soap, if well made, is of a dull white or greyish tint. It is prepared by dissolving 1 part of golden sulphuret of antimony in 2 parts of a saturated solution of caustic potash, to this add of Castile soap in powder 4 parts, triturate till the whole assumes a proper consistence.

SOAP, HONEY. Melt together pure palm oil soap and olive oil soap of each 1 part, curd soap 3 parts, add to the melted mass a sufficiency of oil of geranium; mix thoroughly and cast in moulds of an oval form.

SOAP OF IODINE. This is a useful soap in serofulous and some cutaneous cases. Make a solution of 1 part of iodide of potassium in 3 parts of water; to this add of pounded Castile soap 16 parts; melt in a porcelain vessel by the aid of a water bath.

SOAP, MERCURIAL (ANTISYPHILITIC SOAP). Beat into a homogeneous mass in a wedgewood mortar, Castile soap 1 pound, protochloride of mercury $\frac{1}{2}$ ounce dissolved in 4 ounces of alcohol.

SOAP, SULPHUR. Cut into small shavings white soap 8 ounces; beat up in a mortar with sublimated sulphur 2 ounces, add 1 ounce of alcohol, to which may be added a few drops of any of the odoriferous essential oils; beat the whole into a smooth paste, and roll into balls.

SOAP, TRANSPARENT. Dissolve in a close vessel finest soft soap with an equal quantity of rectified spirit; after standing for forty-eight hours, pour off the clear portion into moulds of a suitable shape, and dry by exposure to the atmosphere.

SOAP, WINDSOR BROWN. Take of finest yellow soap (old and hard) 14 pounds; melt with the aid of a little warm water, and add oil of carraway $\frac{1}{2}$ ounce, cassia in fine powder 6 ounces; mould into cakes. **WHITE:** Take of fine white curd soap 14 pounds, oil of carraway 6 drachms, oil of bergamot $1\frac{1}{2}$ ounce; melt as before, add the oils and mould into eakes.

SOLUBLE BLUE is made by taking 7 parts of oil of vitriol, placing it in a glass vessel, setting this in cold water, and adding gradually one part of fine indigo in powder, stirring the mixture at each addition with a glass rod. Cover the vessel for twenty-four hours, then dilute with an equal quantity of water.

SOLUTION OF CHLORAL HYDRATE. Take of chloral hydrate 1 ounce, water 1 ounce, simple syrup $\frac{1}{2}$ ounce, essential oil of almonds 2 to 3 drops.

SPECIFIC SOLUTION, FRANKS'. The following formula is given by Mr. A. J. Cooley under this title:—"Take of balsam of copaiba 2 parts, liquor of potassa (Ph. L.) 3 parts, water 7 parts; boil the mixture for two or three minutes, put it into a separator; and allow it to stand five or six days, then draw it off from the bottom, avoiding the upper stratum of oil, and to the clear liquid add of sweet spirit of nitre (perfectly free from acid) 1 part; should it turn foul or milky, a very little liquor of potassa will usually brighten it; if not, place it in a clean separator, and let it stand closely covered for a few days, and then draw it off from the bottom as before, when it will be perfectly transparent without filtering."

SPIRIT OF MOUSSELINE. Take of orange-flower water and gilly-flower water of each 1 pint, spirit of roses, spirit of jasmine and spirit of orange flower (enfleurage) of each 1 quart, essences of vanilla and musk of each 1 ounce, santal woods havings 2 drachms.

SPIRIT OF RHUBARB, SWEET. Take of rhubarb and liquorice root of each (bruised) 1 ounce, aniseed (bruised) $\frac{1}{2}$ ounce, sugar $\frac{1}{2}$ ounce, proof spirits 1 pint; macerate for fourteen days and filter.

SPIRITS, VULNERARY (VULNERARY WATER). Take of rosemary leaves 12 ounces, thyme and millefoil 4 ounces, juniper berries 12 drachms, proof spirit 1 gallon.

SPONGES, TO BLEACH. White sponge is prepared generally by soaking the common sponge in very dilute hydrochloric acid to remove the calcareous matter, then in cold water, changing it frequently, and squeezing the sponge out each time; it is then soaked in water holding a little sulphurous acid, or a very little chlorine in solution; lastly, the sponge is washed in clean water and scented with rose or other fragrant water, and dried. Another way is to

soak it in dilute hydrochloric acid for ten hours, then wash well with water and immerse in a solution of hyposulphite of soda, with a small addition of diluted hydrochloric acid; wash and dry. Be careful to use the acids not too strong.

SPRUCE BEER. Take of essence of spruce $\frac{1}{2}$ a pint, pimento and ginger, bruised, of each 4 ounces, hops 4 ounces, water 3 gallons; boil for ten minutes, strain, and add 11 gallons of warm water, 1 pint of yeast, and 6 pints of molasses. Mix, and allow the mixture to stand and ferment for twenty hours before bottling off.

SPRUCE, ESSENCE OF. Collect and boil the tender young tops of the black spruce (*Abies nigra*) in water, and concentrate the decoction by evaporation.

STEER'S OPODELDOC. (See OPODELDOC).

STRIPPING LIQUID. This name is given by jewellers &c. to a bath composed of 1 part, nitre dissolved in 8 parts sulphuric acid; used in the treatment of old silver plated goods.

STYPTIC COLLOID (*Richardson*). This valuable dressing for wounds is prepared by simply saturating a given quantity of ether with tannin and xyloidine or gun-cotton. The tannin, perfectly pure, is digested with absolute alcohol for several days and ether is added until the thick alcoholic mixture is made completely fluid; now add the xyloidine or gun-cotton to the solution as long as it continues readily to dissolve; add a few drops of tincture of benzoin.

SUCCINIC ACID. Mix together equal quantities of sand and powdered amber; distil with care, gradually raising the heat; cover the product with filtering paper, and apply pressure to remove all traces of oil, finally sublime.

SUGAR OF MILK (**LACTIN**). This variety of sugar, so largely used by homœopathic pharmacists, is prepared by evaporating clarified whey until crystals show themselves, as the temperature is reduced; the crystals are purified by means of animal charcoal.

SUPPOSITORIES, MATERIALS FOR. Take of best glue 4 ounces, glycerine 8 ounces, golden syrup 2 ounces, water 8 ounces; soak the glue in the water until quite soft, then dissolve over a water bath; mix the syrup and glycerine well together, add them to the glue solution, and boil till they lose about two ounces weight, then pour out on an

oiled tray or any suitable mould, previously removing the scum. When required for use melt in a little water, gently adding the active drug intended to be applied.

SYRUP OF CHLORAL HYDRATE (American). Take of hydrate of chloral $\frac{1}{2}$ drachm, chloroform water 2 drachms, syrup of orange 3 drachms, tincture of ginger 12 drops, water $\frac{1}{2}$ ounce. The chloroform water is prepared by dissolving $\frac{1}{2}$ a fluid ounce of chloroform in 1 gallon of water.

SYRUP OF CHLORAL HYDRATE (French): Chloral hydrate 2 parts, mucilage of gum arabie 15 parts, distilled water 15 parts, syrup 15 parts. A formula much used on account of its effectually disguising the taste of the chloral, is as follows: Syrup of orange flowers and simple syrup of each 10 ounces, chloral hydrate $3\frac{1}{2}$ ounces.

SYRUP OF CITRIC ACID (American). Take of citric acid in fine powder 60 grains, water a sufficiency, simple syrup 16 fluid ounces, oil of lemon 30 drops; dissolve the citric acid in the water, add the syrup and oil of lemon, shaking until thoroughly mixed.

SYRUP OF CODEIA. Take of codeia 24 grains, distilled water 4 ounces, sugar 8 ounces; dissolve the codeia in the water with the aid of heat, adding the sugar last.

SYRUP OF GINGER. Take of tincture of ginger 4 ounces, white sugar 7 pounds, water $\frac{1}{2}$ a gallon. Heat the sugar in the water until dissolved, then raise to the boiling point, and gradually add the ginger, stirring briskly.

SYRUP OF HOREHOUND. Take of horehound (*Marrubium vulgare*) 4 ounces, water 40 ounces; digest on a water bath, strain, and add of sugar a sufficiency to make a syrup.

SYRUP OF HYPOPHOSPHATE OF LIME. Take of hypophosphate of lime 1 ounce, water $9\frac{1}{2}$ (fluid) ounces, white sugar 12 ounces, fluid extract of vanilla $\frac{1}{2}$ an ounce; dissolve the salt in the water and filter, add the sugar; dissolve with the aid of heat and add the vanilla. Dose a teaspoonful.

SYRUP OF HYPOPHOSPHATE OF IRON. Take of sulphate of iron 1 ounce, hypophosphoric acid 6 ounces, carbonate of soda $1\frac{1}{2}$ ounce, dilute phosphoric acid 1 ounce, distilled water a sufficiency, sugar 12 ounces. Dissolve the sulphate of iron and the carbonate of soda in separate quantities of distilled water; mix the solutions and collect the precipitate, which dissolve in the acids, and lastly add the sugar.

SYRUP OF IPECACUANHA. Take of ipecacuanha in coarse powder $1\frac{1}{2}$ ounce (avoirdupois), dilute sulphuric acid 10 ounces, spirits of wine $\frac{1}{2}$ an ounce, white sugar 1 pound. Macerate the ipecacuanha in the acid for three days, and pack in a percolator; add more dilute acid till 10 fluid ounces have passed through; to this add the spirit, and dissolve the sugar with gentle heat in the liquid so obtained.

SYRUP OF LEMONS. Oil of lemons 25 drops, citric acid 10 drachms, simple syrup 1 gallon; rub the oil of lemon in a mortar with the citric acid, add the syrup and mix.

SYRUP OF LIQUORICE. Take of liquorice root 4 ounces, boiling water 16 ounces; digest the liquorice in the water four-and-twenty hours; add 12 ounces of refined white sugar.

SYRUP, MRS. WHEELER'S AMERICAN SOOTHING. Take of white sugar 35 ounces, lime water 11 ounces, fluid extract of poppies 4 fluid ounces, oil of anise 1 drachm, podophyllum extract (fluid) $\frac{1}{2}$ an ounce, rectified spirit 2 ounces.

SYRUP OF ORANGES. Take of oil of oranges 30 drops, tartaric acid 4 drachms, simple syrup 1 gallon; mix as for Syrup of Lemons.

SYRUP OF PHOSPHATE OF IRON (*Grove's process*). Take of sulphate of iron 224 grains, phosphate of soda 200 grains, solution of ammonia a sufficiency, diluted phosphoric acid $5\frac{1}{2}$ fluid ounces, syrup 9 fluid ounces; powder the salts and mix them, and pour upon them 2 fluid ounces of boiling distilled water, stirring carefully; then add solution of ammonia with repeated stirring until the mixture smells slightly ammoniacal; wash the precipitate with distilled water, first by decantation, afterwards on a filter, until the filtrate ceases to be affected by chloride of barium; then press the washed precipitate strongly in a fold of cotton, and having evaporated the dilute phosphoric acid to 2 fluid ounces, dissolve the precipitate in it; filter the solution, and add distilled water until it measures exactly 3 fluid ounces. Each fluid drachm of this solution contains 4 grains of phosphate of iron, and when added to 3 drachms of syrup forms the standard *Syrupus Ferri Phosphatus* (P.B.).

SYRUP OF SARSAPARILLA. Take of simple syrup 1 gallon, extract of sarsaparilla 1 pint, extract of liquorice powdered 1 ounce, oil of sassafras, oil of wintergreen, and oil of

anise, of each 10 drops; rub the oils with the powdered liquorice, and add by degrees the syrup.

SYRUP, SIMPLE. Take of refined white sugar 14 pounds, water 1 gallon; dissolve with the aid of a gentle heat, strain, and when cold add the white of 2 eggs.

SYRUP OF VANILLA. Take of fluid extract of vanilla 1 ounce, citric acid 4 drachms, simple syrup 1 gallon. Rub the acid down in the syrup and add the extract of vanilla.

SYRUP OF WILD CHERRIES, COMPOUND. Sulphate of morphia 2 grains, oxysulphuret of antimony 4 grains, syrup of wild cherry bark 4 ounces (troy). Triturate the powders in a mortar with a little of the syrup until the mixture is complete, add the remainder of the syrup. Dose a teaspoonful every four hours.

SYRUP OF WILD CHERRY BARK (U. S. PH.) Wild cherry bark 5 ounces (troy), sugar in coarse powder 28 ounces (troy), water a sufficiency; saturate the bark with water, and allow it to stand for four and twenty hours; pack it in a percolator glass and gradually pour water until a pint of tincture is obtained; transfer to a bottle, add the sugar, and agitate till dissolved.

SYRUP OF WORMWOOD (*Paris Codex*). Wormwood tops 1 part, boiling water 8 parts; make an infusion, express, and strain; weigh the product, and add twice the amount of sugar. [A useful stomachic in doses of 2 drachms.]

T

THEINE. This alkaloid, which is identical with Caffeine, may be obtained from the tea plant in the same manner as the latter alkaloid is obtained from coffee.

THEOBROMINE. Obtained from the seeds of the *Theobroma cacao*. Similar to caffeine and obtained in a similar manner.

THYMOL. This is simply the stearopten of the essential oil extracted from the *Ptychotis ajowan*. It is recommended by M. Paquet as a disinfectant; it has been used as a caustic, and in dentistry applied to hollow teeth.

TINCTURE OF ACTÆ RACEMOSÆ. Take of the root of *actæ racemosa* 5 ounces, distilled water 20 ounces, rectified spirits of wine 20 ounces; reduce the root to powder, and digest with the spirit and water; at the end of four days percolate, passing over the mass a sufficiency of fresh spirit and water to make a total of 2 pints. Dose, $\frac{1}{2}$ drachm to 2 drachms, in rheumatism, &c.

TINCTURE OF IODINE, COLOURLESS. Take of the compound tincture of iodine 45 grains, carbolic acid crystallised 6 grains, glycerine 8 drachms, water 5 ounces.

TINCTURE OF MUSK-SEED, ESPRIT AMBERETTE. Take of musk-seed (*Hibiscus moschatus*) 4 ounces, proof spirit 20 ounces; digest for fourteen days, and distil over two-thirds.

TINCTURE, ODONTALGIC (Magitot). Chloroform 5 parts, laudanum 2 parts, tincture of benzoin 10 parts; mix. Apply on cotton wool.

TISANE, PTISANE. This name is given in French pharmacy to various demulcent, pectoral and aperient decoctions, of which the following is an example:—**TISANE ROYALE**; Take of sulphate of soda, senna leaves and fresh chervil of each $\frac{1}{2}$ ounce, aniseed and cinnamon bruised of each 1 drachm, water 36 ounces: macerate for several hours, express, and strain. Dose: a wineglassful repeated at intervals.

TOBACCO CERATE. See CERATES.

TOOTHACHE TINCTURE. Alcohol $\frac{3}{4}$ ounce, chloroform $\frac{1}{2}$ ounce, kresote $\frac{1}{4}$ ounce.

TOOTH CEMENT, MINERAL "SUCCEDANEUM". Melt a sufficiency of fine gold wire or leaf in an iron ladle, add thereto a sufficiency of mercury to produce a plastic mass when heated. In using, clean the cavity of the tooth thoroughly, heat a sufficiency of the amalgam, and work it as hot as possible into the tooth.

TOOTH CEMENT (Bernotte). Mix together 2 parts of powdered mastic with 1 part of ether, and afterwards with a sufficiency of burnt alum (in fine powder), to form a paste of a suitable consistency.

TOOTH PASTE, ARECA-NUT. Prepared charcoal 1 ounce, prepared chalk 3 ounces, areca-nut powder 1 drachm, honey

a sufficiency, otto of roses 20 drops, oil of neroli 30 drops, essence of ambergris 10 drops, oil of rose geranium 10 drops.

TOOTH POWDER, CAMPHORATED. Precipitated chalk 1 pound, powdered orris root $3\frac{1}{2}$ ounces, powdered camphor 4 ounces.

TOOTH POWDER, TONIC. Willow charcoal 4 ounces, chinchona bark 1 pound, sugar of milk in fine powder 1 pound, transparent soap well-seasoned 2 ounces; mix in a mortar, sift, and add oil of oranges 1 ounce.

TOOTH POWDER, ROSE. Precipitated chalk 1 pound, rose pink 2 drachms, otto of roses 5 drops.

TOOTH POWDER, AMERICAN. Coral in fine powder 4 ounces, cuttle-fish bone 4 ounces, dragon's blood 4 ounces, burnt alum 2 ounces, red sanders 2 ounces, orris root 4 ounces, cloves 2 drachms, cinnamon 2 drachms, vanilla 2 drachms, rosewood 2 drachms, rose pink 4 ounces.

TOOTH POWDER (*Miathes*). Sugar of milk 3 ounces, pure tannin 3 drachms, lake 1 drachm, oil of mint 8 drops, oil of aniseed 8 drops, oil of neroli 4 drops.

TOOTH WASH (*Ruspini*). Orris root in coarse powder 4 ounces, cloves $\frac{1}{2}$ ounce, ambergris 10 grains, alcohol 1 pint; digest for several days, and filter.

TROCHES. See LOZENGES.

TUNGSTATE OF AMMONIA. To render fabrics uninflammable this is the best known agent. Take a concentrated solution and dilute it with twelve times its own bulk of water; the fabrics are to be moistened with this solution previous to their being starched, after which they can be ironed and finished as usual. No colour is affected by this process, however light or delicate, and the materials thus prepared cannot be ignited, but merely charred. It is very valuable as a safeguard for wearers of muslin dresses, and for children's clothing; and it is specially adapted for rendering indestructible the garments of ballet dancers and other stage performers.

TYREAN HAIR DYE. See HAIR DYES.

U

USQUBACH. This term, now applied to Irish malt spirit, was originally the name of a spiced liqueur, made as follows:—Take nutmegs, cloves, and cinnamon of each 2 ounces, of the seeds of anise, carraway, and coriander of each 4 ounces, liquorice sliced $\frac{1}{2}$ pound; bruise the seeds and spices, and put them together with the liquorice in a still; with 11 gallons of proof spirit, and 2 gallons of water; distil till the *feints* begin to rise, add sufficient sugar to soften the spirit.

V

VANILLA, TINCTURE OF. Take of rectified spirit 1 pint, vanilla 1 ounce; prepare by percolation.

VARNISH, CAOUTCHOUC. Digest 2 parts of caoutchouc cut small in 64 parts of rectified spirits of turpentine, and strain through fine muslin.

VARNISH FOR SILVER. Take of elemi 30 parts, white amber 45 parts, charcoal 30 parts, spirits of turpentine 375 parts. This varnish must be used in a heated state; the metal to which it is to be applied being heated also.

VARNISH, COACHMAKERS' BLACK. Take of amber 16 ounces; melt in $\frac{1}{2}$ pint of boiling hot linseed oil, add 3 ounces of asphaltum, and 3 resin; mix thoroughly over a fire, and add when cooling 1 pint of oil of turpentine slightly warm.

VICTORIA BOUQUET. Cloves in powder $\frac{1}{2}$ drachm, vanilla 1 drachm, oil of cedrat 4 drops, oil of santal 1 drachm, oil of verbena 8 drops, oil of rose 8 drops, oil of neroli 20 drops, oil of lavender 16 drops, ambergris 16 grains, tincture of musk 1 drachm, rectified spirit 1 pint; digest for fourteen days, and filter.

VINEGAR, AROMATIC. Take of camphor 1 ounce, oil

of cloves 1 drachm, oil of lavender 40 drops, oil of rosemary 40 drops, acetic acid (glacial) 10 ounces,

VINEGAR, CAMPHORATED. This is prepared by dissolving $\frac{1}{2}$ ounce of gum camphor in 8 ounces.

VINIGRE DE QUOTRE VOULRES. There are several formulæ for this celebrated toilet vinegar extant. The following is generally admitted to be the best:—Take of rosemary tops 4 ounces, sage flowers 4 ounces, lavender 2 ounces, rue $2\frac{1}{2}$ ounces, camphor 1 ounce, cloves 1 drachm, white wine vinegar 1 gallon.

VINEGAR, AROMATIC (*French*). Take of camphor 1 ounce, oil of cloves 15 drops, oil of cinnamon 10 drops, oil of lavender 5 drops, acetic acid (glacial) 10 ounces; mix in a well-stopped bottle by frequently shaking. (*German*). Take of oil of cloves 1 drachm, oil of cedrat 1 drachm, oil of lavender 40 drops, oil of bergamot 10 drops, oil of thyme 20 drops, oil of cinnamon 10 drops, acetic acid (placial) 8 ounces.

VIOLET HONEY. See HONEY.

VIOLETS, SPIRITS OF. The so-called spirit of violets is usually made by percolating rectified spirit through powdered orris root in the proportions of 1 pint of spirit to each ounce of the root.

VIOLINE. See ANILINE VIOLET.

W

WAFERS, PULMONIC (*Cooley*). Take of refined sugar in powder and starch of each 2 parts, powdered gum 1 part; make into a mass with oxymel of squills, vinegar of squills and ipecacuanhna wine equal parts, evaporated to 1-6 their weight, add lactucarium in the proportion of 30 grains to the ounce; make into 7 or 8-grain tablets.

WAFERS, DA SILVAS. Take of sugar and extract of liquorice of each 1 ounce, senna and jalap of each 30 grains; make into a mass with a concentrated infusion of senna, and into wafers each weighing 12 grains.

WALNUT POMADE. Take of extract of walnut leaves 3 drachms, lard 4 drachms, oil of bergamot 8 drops; mix.

WARD'S RED DROPS. A concentrated form of wine of antimony.

WART OINTMENT. Take of galbanum 1 ounce, pitch $\frac{1}{2}$ an ounce, lead plaister 2 drachms; melt and add acetate of copper and muriate of ammonia of each 1 ounce. This forms a very useful application for corns and warts.

WATER, BITTER ALMOND. This may be prepared by either rubbing down oil of bitter almonds in magnesia, and adding water in the proportion of 5 drops of the oil to 1 ounce of water, or a solution of oil in alcohol may be mixed with water to the required strength.

WATER, JASMINE, ESPRIT DE JASMINE. Take of spirit of jasmine (*enfleurage*) and rectified spirit of each 1 pint, essence of ambergris 1 drachm.

WATER, ROSE. Take of otto of roses 3 drachms, rectified spirit (warm) 1 pint; when dissolved add of boiling water 10 gallons; mix in a 12 gallon carboy; agitate until cold.

WATERPROOF PAPER. Dissolve 8 ounces of alum and $3\frac{3}{4}$ of Castile soap, in 4 pints of water, and 2 ounces of gum arabic and 4 ounces of glue, separately, in 4 pints of water; mix the solutions, heat slightly, dip in the single sheets, which suspend till dry.

WIKANA (Guibourt). Roasted chocolate nuts ground 2 ounces, powdered cinnamon 2 drachms, powdered vanilla $\frac{1}{2}$ drachm, ambergris 3 grains, musk $1\frac{1}{2}$ grains, sugar 6 ounces; well mixed together. This preparation is used as a stimulating diet for invalids; a teaspoonful boiled with a $\frac{1}{2}$ pint of milk may be given at a meal.

WINE, QUININE. Take of sulphate of quinine 20 grains, citric acid 20 grains, orange wine 20 ounces. Rub the quinine and the citric acid well down in a mortar; add during the trituration about 1 drachm of the wine, afterwards gradually adding the remainder.

WOOD PHOTOGRAPHS ON. As the cost of cutting the wood is but a small proportion of that of the finished wood engraving, it may be interesting to many to learn that by photography the cost of the artist's work may be reduced to the minimum. The block on which the picture is to be made is first damped with water, then whitened with enamel, rubbed from the surface of good enamelled visiting cards.

Rub gently, removing only the enamel; after which it is brushed smooth, with a moderately stiff brush, from right to left and up and down, making a smooth, even, and very thin surface. When dry, flow with a solution of albumen made with the white of 1 egg and 16 ounces of water. When dry, it may be coated with a second albumen solution. Take white of 1 egg, water 4 ounces, chloride of ammonia 40 grains. Beat the whole to a thick froth. Allow to subside, then decant or filter through a fine sponge placed in a glass funnel. Pour a sufficient quantity on one corner of the block to cover it, when spread around with the edge of a strip of glass. Let the surplus solution drain into the bottle and dry the film by a gentle heat. Now take of ether 1 ounce, alcohol 1 ounce, gun-cotton 8 grains, nitrate of silver 30 grains; dissolved in as small a quantity of water as possible, and allowed to settle for a few days, protected from the light. Flow the wood block with this solution in the dark room, and dry by gentle heat. It is now ready for exposure under the negative. A porcelain printing-frame, or any other other suitable method, may be used to print it. After printing, dissolve off the film with ether and alcohol, assist by rubbing gently with soft a sponge. The picture can now be toned and fixed in the ordinary way, or fixed and toned at one operation, by the hypo and gold bath. After being allowed to dry it is ready for the engraver.

WORM CONFECTION (*Mrs. Wheeler*). Take of calomel 1 drachm, white sugar 10 drachms, finely powdered sugar 25 ounces, santolin 6 ounces. Mix, and make into 360 wafers.

X

XANTHIC ACID. Mix xanthate of potassa (dry) with dilute sulphuric or hydrochloric acid; a milky liquid will form, from which, by the addition of water, a heavy oily substance is deposited, this, quickly washed with water and dried over chloride of lime, is hydrated xanthic acid.

XYLOIDIN. This variety of gun-cotton is prepared by immersing starch in nitric acid, and treating the jelly so formed with an excess of water.

Y

YEAST POWDERS. These are composed of 1 part of bicarbonate of soda and 1 part of cream of tartar.

YEAST, ARTIFICIAL. Mix 2 parts by weight of fine flour of pale barley malt with 1 part of wheat flour; stir 50 parts of this mixture gradually into 100 parts of cold water with a wood spatula till it forms a smooth magma; this is now to be placed in a copper over a slow fire and well stirred till the temperature rises to nearly 160°, when a partial formation of sugar will result, but care must be taken not to push this too far; turn out into a flat cooler and stir from time to time; as soon as the wort has fallen to 59° Fahr. transfer it to a tub and add for every fifty quarts a quart of fresh beer yeast, which will induce brisk fermentation in the course of a few hours.

YELLOW, TURNER'S (CASSEL YELLOW). Grind together with a little water 1 part of common salt and 4 parts of litharge; digest at a gentle heat for some time, adding more water to supply the loss by evaporation; wash with warm water to remove the carbonate of soda formed in the combination, and heat the residue till it becomes of a clear bright yellow.

Z

ZINC, CHLORIDE OF (Parrish). Take of granulated zinc 4 pounds, hydrochloric acid 4 pounds, water 9 quarts; dissolve, avoiding excess of acid. [The resulting solution of chloride of zinc will be found a useful disinfectant.]

ZINC, IODIDE OF. Iodine 2 parts, granulated zinc 1 part, water 4 parts; proceed as for iodide of iron.

ZINC, WHITE, HUBBUCK'S. This, which is a pure oxide of zinc, will be found infinitely superior to the *Zinci Oxidum* of the Ph. B.

ZIRCONIUM. Heat in a glass tube over a spirit lamp a mixture of the double fluoride of zirconium and potassium, carefully dried; the product is washed with water and digested in dilute hydrochloric acid.

TABLE OF DOSES OF POWERFUL DRUGS.

(Dr. Garrod.)

Acid. Arseniosum	.. ..	..1 sixtieth to 1 twenty fourth of a grain.
Acid. Carbolicum	.. ..	..1 min. to 3 min.
Acid. Hydrocyan. Dil.	.. ..	..2 min. to 10 min.
Antimonii Oxidum	.. ..	..1 gr. to 5 gr.
Antimonii Sulphuratum	.. ..	..1 gr. to 5 gr.
Ant. Tart. (as a Diaphoretic)	.. ..	..1 sixteenth to 1 sixth of a grain.
„ (as a Depressant)	.. ..	..1 sixth of a grain to 2 gr.
„ (as an Emetic)	.. ..	..1 gr. to 3 gr.
Argenti Nitras	.. ..	..quarter grain to 1 gr.
Argenti Oxidum	.. ..	..half grain to 1 gr.
Calomelas (as a Purgative)	.. ..	..2 gr. to 6 gr.
„ (as an Alterative)	.. ..	..half grain to 1 gr. (repeated).
Chloroformum	.. ..	..1 min. to 10 min.
Ext. Aconiti (from juice)	.. ..	..1 gr. to 4 gr.
Ext. Belladonnæ	.. ..	..1 sixth of grain to 1 gr.
Ext. Cannabis Ind.	.. ..	..quarter grain to 1 gr.
Ext. Colchici, or Ext. Colch. Acet.	.. ..	half grain to 2 gr.
Ext. Nucis Vomicae	.. ..	..quarter grain to 2 gr.
Ext. Opii	.. ..	..quarter grain to 3 gr.
Ext. Opii Liquidum	.. ..	..3 min. to 30 min.
Ext. Rhei	.. ..	..1 gr. to 5 gr.
Ext. Stramonii	.. ..	..quarter grain to 1 gr. and a quarter.
Ferri Arsenias	.. ..	..1 tenth to 1 eighth of grain.
Hydrarg. Corrosivum Sub.	.. ..	..1 twentieth of grain to quarter grain.
Hydrarg. Iodidum Rub.	.. ..	..1 twelfth to 1 third of grain.
Hydrarg. Iodidum Vir.	.. ..	..1 gr. to 3 gr.
Iodine	.. ..	..half grain (gradually increased.)
Liq. Morphiae Hydrochl	.. ..	..20 min. to 1 fl. drm.
Liq. Sodæ Arseniatis	.. ..	..5 min. to 30 min.
Morphiæ Hydrochloras	.. ..	..1 eighth of grain to 1 gr.
Oleum Crotonis	.. ..	..half minim to 2 min.
Opium (powdered)	.. ..	..half grain to 4 gr.
Plumbi Acetas	.. ..	..half grain to 3 gr.
Podophylli Resina	.. ..	..quarter grain to 2 gr.
Potassii Iodidum	.. ..	..1 gr. to 10 gr.
Quiniæ Sulphas	.. ..	..1 gr. to 10 gr.
Santoninum (for a child)	.. ..	..1 gr. to 3 gr.
„ (for an adult)	.. ..	..3 gr. to 6 gr.
Sodæ Arsenias (crystals)	.. ..	..1 fifth to half a grain.
„ (dried at 300°)	.. ..	..1 tenth to quarter of a grain.

Sodæ Valerianas	.. ..	.. half grain to 2 gr.
Strychnia	.. ..	.. 1 thirty second to 1 eighth of grain.
Tinet. Aconiti	.. ..	.. 3 min. to 10 min.
Tinet. Belladonnæ	.. ..	.. 5 min. to 30 min.
Tinet. Cannabis Ind.	.. ..	.. 5 min. to 30 min.
Tinet. Cantharidis	.. ..	.. 5 min. to 30 min.
Tinet. Opii	.. ..	.. 4 min. to 40 min.
Veratria (alkaloid)	.. ..	.. 1 twelfth to 1 sixth of grain.
Zinci Aectas (also Carb., Ox., Sulph.)		1 gr. to 5 gr.
Zinci Chloridum	.. ..	.. half grain to 1 gr.
Zinci Valerianas	.. ..	.. half grain to 3 gr.

TABLE OF RULES FOR THE CONVERSION OF METRIC INTO
BRITISH WEIGHTS.

To convert *grammes* into grains.—Multiply by 154; cancel the last figure of the product, the result is the true equivalent if the cancelled figure be taken as representing tenths of a grain. Thus 4 grammes equal 61·06 grains—

$$4 \times 154 = 61\cdot06.$$

To convert grains into *grammes*.—Multiply by 65; place a period before the last three figures of the product, and read the figures on the left as *grammes*, those on the right as *milligrammes*. Thus 31 grains equal 2 *grammes*, ·015 *milligrammes*—

$$31 \times 65 = 2\cdot015.$$

To convert cubic centimetres into fluid drachms.—Multiply by 28, and cut the two last figures off the product. Thus:—

$$100 \times 28 = 28(00).$$

TABLE SHOWING THE
SOLUBILITY OF SOME CHEMICALS IN GLYCERINE.

(Klever.)

100 parts glycerine dissolve the annexed quantities of the following chemicals:—

Acid. arseniosum .. 20	Morph. acct. 20
„ arsenicum .. 20	„ muriat. 20
„ benzoicum .. 10	Phosphorus 0·20
„ boracicum .. 10	Plumb. acct. 20
„ oxalicum 15	Potas. arsen. 50
„ tannicum 50	„ chlorat. 3·50
Alumen 40	Potassii bromid. 25
Ammon. carb. 20	„ cyanid 32
„ muriat. 20	„ iodid. 40
Antimonii et potas. tart. 5·50	Quinia 0·50
Atropia 3	Quiniae tanat. 0·25
Atropia sulph. 33	Sodæ arseniat. 50
Barii chlorid. 10	Sodæ bi-carb. 8
Brucia 2·25	„ borat. 60
Calcii sulphid. 5	„ carbonat 98
Cinchonia 0·50	„ chlorat 20
Cinch. sulph. 6·70	Sulphur 0·10
Cupri acetat. 10	Strychnia 0·25
„ sulph. 30	Strychn. nitrat. 4
Ferri et potas. tart .. 8	Strychn. sulphat. .. 22·50
„ lactat. 16	Urea 50
„ sulph. 25	Veratria 1
Hydrarg. chlor. corros. 7·50	Zinci chlorid. 50
„ cyanid 27	„ iodid. 40
Iodium 1·90	„ sulphat. 35
Morphia 0·45	

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INFANTS

SATISFYING,

STRENGTHENING,

SOOTHING.



FOR

INVALIDS

AGREEABLE,

DIGESTIBLE,

NOURISHING.

(TRADE MARK.)

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THE PATENT FOOD

Possesses the following Advantages over all other Articles of a similar character, viz.:—

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Is cheaper

Is made without trouble in two minutes

Requires no cooking

Does not cause acidity or wind

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☞ Can be made with or without milk

Sold by Chemists everywhere, in Packets and Canisters, with clear and full directions for both Infants and Invalids.

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Also **PATENT OATMEAL**, in Packets and Tins.

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Pharmaceutical Chemists will use this in preference to the *Zinci Oxidum* of the Br. Ph. 1867, which is a return to the process of the Pharmacopœia of 1836, being a roasted Carbonate as a substitute for the pure Oxide.

Hubbuck's Pure Oxide is made by sublimation, and is warranted to contain upwards of 99 per cent. of Pure Oxide.

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January, 1871.

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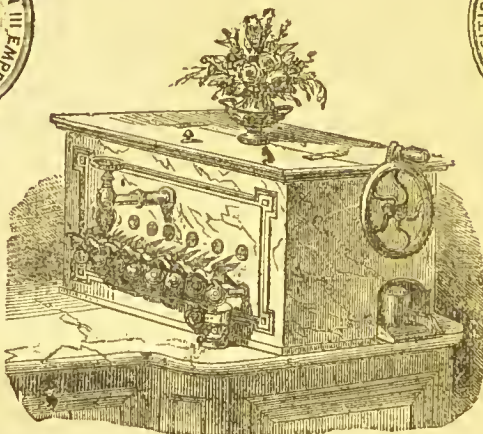
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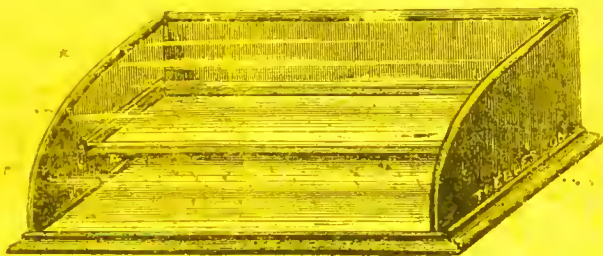
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